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ABSTRACT

Three major goals of vocational education are presented: a) meeting the manpower needs of society, b) increasing options available to each individual, and c) lending intelligibility to general education. Educational background and economic characteristics of professionals in the field are detailed as are legislative histories of the Manpower Development and Training Act and various other federal programs. Various programs for personnel development, certification of teachers, and resource planning are also mentioned. A summary and specific recommendations for federal funding and administration of programs conclude the report. (JB)

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VOCATIONAL EDUCATION: STAFF DEVELOPMENT PRIORITIES FOR THE 70'S

U.S. DEPARTMENT OF HEALTH,
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A Report of the
National Advisory Council
on Education Professions Development

National Advisory Council on Education Professions Development
Room 308, 1111 - 20th Street, N.W., Washington, D.C. 20036

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The National Advisory Council on Education Professions Development was established by Public Law 90-35 in June of 1967. Members are appointed by the President. The Council is charged with the review of the Education Professions Development Act and of all other Federal programs for the training and development of educational personnel. Reports of findings and recommendations are made to the President and to the Congress.

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*as of March 1973

* * * * *

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FOREWORD

Over the last several years there has developed in the nation a heightened awareness of the importance of vocational education. The intense public interest that has been demonstrated in this aspect of education is a most salutary development.

To translate this awareness to effective action will require effort on many fronts. Certainly, a very substantial part of this effort concerns the training and development of educational personnel in this field.

In May of 1972 the National Advisory Council on Education Professions Development voted to assign special priority to this topic, and to prepare a report which would identify the needs for educational personnel development in vocational education, and review existing legislation and programs with a view to determining the extent to which they were meeting these needs.

The Council felt strongly that any study of the needs for the training and development of vocational educational personnel would not be adequate unless it was based on the broadest conception of vocational education. Among other things, this means that account must be taken of the many new occupations which require specialized training, and the increasingly rapid changes that are taking place in the nature of existing occupations. One of the important implications of these changes is that provisions must be made to insure that teachers, administrators, counselors, teacher educators, and other personnel in vocational education are kept abreast of a constantly changing world of work. Thus, the continuing education of personnel in this field of education is an imperative.

The Council commissioned Dr. Rupert N. Evans, Professor of Vocational and Technical Education, University of Illinois, to prepare a draft report which would deal with these concerns. The Council has reviewed the draft and, with appropriate revisions, approved the accompanying report.

The members of the Council hope that decision-makers -- at all levels of government and in both the public and private sector -- will find the observations and recommendations of this report useful in gaining a further understanding of this important aspect of vocational education.

Mary W. Rieke
Chairman
National Advisory Council
on Education Professions
Development

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Support for this study was supplied by the National Advisory Council on Education Professions Development.

The Council's Ad Hoc Committee on Career-Vocational-Manpower Training chaired by Jennie A. Caruso, and comprised of Larry J. Blake, Marvin D. Johnson, Ralph F. Lewis, and Mary W. Rieke has carefully reviewed the text. The Chairman of the Council, Mary W. Rieke, and the Executive Director, Joseph Young, have provided continued encouragement and guidance.

The general format of this report follows that of a previous council study concerning staff development needs of the community and junior colleges. This was prepared by Dr. Terry O'Banion and is now published by the University of Arizona.

The most important source of data was the previous work of Dr. George Ferns, but as the bibliography indicates, many other sources were used as well.

David Terry was particularly helpful in providing data for and writing major portions of the section dealing with health occupations. Many persons read early drafts of this document and provided excellent suggestions for revision. Among them were: Melvin Barlow of the University of California at Los Angeles; George Ferns of Michigan State University; Lloyd Phipps and Robert Tomlinson of the University of Illinois, Urbana; Howard Gholson, Otto Legg, Mary Marks, and Helen Powers of the Bureau of Adult, Vocational and Technical Education, and Frank Parrazoli of the National Center for Improvement of Educational Systems (formerly the Bureau of Education Personnel Development) of the U. S. Office of Education.

Most of the interviews of students, faculty, and administrators at the local, state and Federal level were conducted by David Sisson, and the majority of the writing was done by Rupert Evans, who, as senior author, is solely responsible for errors of commission and omission.

My wife, Barbara Jean Evans, edited and typed the manuscript. My entire family contributed forbearance.

Rupert N. Evans
Champaign, Illinois
January, 1973

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VOCATIONAL EDUCATION: STAFF DEVELOPMENT PRIORITIES FOR THE 70'S

Chapter I

Introduction

It is necessary to have some understanding of vocational education programs in order to understand the problems of educating teachers and other professionals who conduct these programs. Vocational education is preparation for success in employment. It may be offered prior to employment or after employment; to youth or to adults; in day school, evening school, or on-the-job; by public schools, private schools, by employers or by fellow employees. Costs of instruction may be borne directly by tuition payments from students; by public funds collected from taxpayers; by private funds contributed by employers who may or may not be able to pass these costs on to consumers; or by combinations of funds from these same sources.

In its broadest sense, vocational education includes preparation for medicine and law as well as for home-making, carpentry, and secretarial work. In its narrowest sense, it refers to school-related programs supported by the various Federal vocational education acts.

All types of education have some vocational value. Reading, writing, and arithmetic are necessary to success in a wide variety of occupations. Each school subject has vocational value to those people who seek employment as teachers of that subject. For classification purposes, it has been common to differentiate between general education, which is of nearly equal value to all people, and vocational education, which must have somewhat different content depending on the group of occupations studied. Hence, any one type of vocational education has greater value to those people engaged in certain types of employment than it is to people who work in other types of jobs. This differentiation has led some people to view general education and vocational education as being antagonistic. Nothing could be further from the truth. Each is necessary, and each complements the other. General education, by definition, is necessary for vocational education and must precede or accompany it. Vocational education lends intelligibility to general education. Both general and vocational education must exist in some form if society is to survive for more than a few years.

Every society has as one of its major goals the transmission of knowledge from the past. High priority for such a goal comes not so much from reverence for the past as from a desire to smooth the way for the future. If most, or even some, of the mistakes of the past can be avoided in the future by the transmission of knowledge, everyone benefits.

Prior to the invention of reading and writing, almost all knowledge of the past was transmitted orally or through demonstrations. Often these two methods were combined. Even today, much of the store of man's knowledge is transmitted in these same old ways, and for good reason. The invention of printing simplified and made more economical the transmission of many of the ideas which earlier had been communicated orally. Printed words substituted for oral words, but certain nuances were lost, and for some cultures the losses were far greater than for others. Similarly, the invention of motion pictures and video tape simplified and made more economical the transmission of many of the ideas which earlier had been communicated through demonstrations, with or without accompanying oral description. But again, some things were lost. The motion and the sounds of a demonstration could be communicated, but the odors, the tastes, and the muscular and visceral sensations were lost. Lost, too, were the social values which can be developed only through group participation in a common task.

As a result, our society continues to employ not only books, motion pictures and video tapes, but also oral descriptions, demonstrations, and simulation as it moves about its task of transmitting the knowledge of the past. It relies more heavily than any society of the past on schools as the organizational vehicle for this transmission. At the same time, society is critical of the efficiency of the schools and rightly seeks to encourage the schools to cope more and more effectively with the added tasks they face every year.

The added tasks faced by the schools come primarily from three sources:

a. The expansion of knowledge. It has been noted, for instance, that 90% of our total output of scientists are still alive today, and that their published research output has been doubling each ten years.

b. The added proportion of the population included within advanced levels of education. In 1900, less than ten percent of the population attended high school. Now more than 95% attend, and over two-thirds graduate. Attendance gains in post-secondary schools are almost as startling.

c. New assignments added to school responsibilities. For a variety of reasons, society has called on the schools to add new subjects including vocational education, driver training, sex education, and consumer economics, which formerly were taught by other social institutions.

The biggest task undertaken by the schools in the last seventy-five years is that of preparing all youth and adults for meaningful employment. This task is far from being accomplished. Almost all high school dropouts leave school with no specific preparation for employment. This is understandable, since most secondary school vocational education is available only to juniors and seniors, while dropouts leave school most frequently as sophomores. High school graduates who do not go to college are not much better served; only a fourth of them have completed a vocational curriculum. Half have completed a college preparatory curriculum, while those in the remaining quarter are prepared for nothing, through the general curriculum. These three secondary school curricula each draw students from every socio-economic level, but the average socio-economic level is highest by far for students in the college preparatory curriculum, and lowest in the vocational curriculum. Twice as many girls as boys are enrolled in high school vocational education programs, but are frequently limited to the study of office occupations and home economics.

Students who go on to college are more likely to have an opportunity to be prepared for employment. From a quarter to a half of community college students are enrolled in vocational education programs designed to prepare them for entrance to or for upgrading in such occupational fields as: electronics technician, nurse, automobile mechanic, secretary, sales clerk, nurseryman, or child care aide. Baccalaureate programs often have an even stronger vocational emphasis, preparing a majority of students to be teachers, engineers, accountants, journalists, home economists, farm managers, or for other professional occupations. Graduate schools are almost entirely devoted to vocational preparation for a wide variety of professions.

Preparation for entry into an occupational field is not enough, however. As occupations become more complex, with new materials and processes appearing daily, it is necessary for physicians and electricians alike to renew their vocational education periodically. This requires the establishment of vocational education programs for adults.

Moreover, as opportunities for advancement change and as people learn more about their abilities and handicaps and their personal likes and dislikes, they desire to change occupations. Vocational education enables such changes to be made with a minimum of dislocation.

Public Support for Vocational Education In The United States

President Abraham Lincoln signed the law which provided the first substantial Federal support for vocational education. This law supported Land-grant Colleges for training people in agriculture and the mechanic arts. By the turn of the century, however, these colleges were training engineers rather than mechanics, while the other public education institutions were completely unconcerned about occupational preparation (except for a few professions).

Leadership was provided by employers and a few key educators. Union leaders cooperated as state after state passed laws demanding vocational education for all youth who wanted it. Finally, in 1917, the Congress passed the Smith-Hughes Act, which provided Federal funds to the states to support instruction for agricultural, home economics, and trade and industrial occupations. Funds were also provided for training vocational teachers and administrators, so this was also the first example of Federal education professions development legislation.

Federal support for vocational education followed the basic Smith-Hughes pattern until 1963, and some of its features are retained today. The principal changes have been two: many additional occupational fields and services have been added, and the goals of the program have expanded markedly. Originally, the important objective was to meet the manpower needs of society.

Basic Goals of Vocational Education

Today, there are three goals of vocational education: to meet the manpower needs of society, to increase the options available to each individual, and to lend intelligibility to general education. (See Evans, 1971, Chapters 1, 2, and 3 for a further discussion of these goals.)

All three of these goals are not emphasized to the same extent in each vocational education program. The goal of lending intelligibility to general education, for example, is usually found only in vocational education programs operated by institutions which have a strong general education component, eg. comprehensive high schools and community colleges. It is rarely, if ever, emphasized in private trade schools and in vocational training offered by employers.

The goal of increasing the options available to each individual is a primary goal of most vocational programs offered by educational institutions. It is a distinctly secondary goal, however, for most vocational programs offered by non-educational institutions. If the primary goal of the institution is the production of goods, it is likely that any vocational program it offers will be designed to enhance the production of goods. If trainees have their options enhanced simultaneously, well and good, so long as the primary goal of production is achieved. If, on the other hand, trainee options are enhanced to the extent that employee turnover begins to interfere with the primary goal of the sponsoring firm, then the training program will be redesigned to reduce this type of trainee option.

The oldest and most universally recognized goal of vocational education is to meet the manpower needs of society. Whenever a nation, an employer, or any other agency feels that its manpower needs are not being met, it encourages the establishment of vocational education programs. Nations are particularly likely to do this when they are engaged in wars, have foreign trade deficits, or feel the need to restrict the immigration of skilled workers from other countries. When the manpower needs crisis is past, this encouragement of vocational education tends to diminish.

Thus we see that vocational education which stresses the meeting of manpower needs tends to be cyclical in nature. The length of these cycles tends to be about one generation, so about once in each 25 years there is a strong push for expansion of vocational education, and between each of these expansions there tends to be a strong push to minimize the amount of vocational education.

In strong contrast are the vocational education programs which emphasize the increasing of the options available to the individual. The size of such programs is affected much less by the extent of manpower shortages. Indeed, if individual options are to be enhanced, vocational education is needed more in times of labor surplus than in times of labor shortage. The principal factors affecting the size of this type of vocational education are: a. its availability, and b. the number of people needing and wanting vocational education. Both of these factors, but especially the latter is affected by the rapidity of technological change, which demands vocational education to enable the individual to cope with it.

The Manpower Development and Training Act is an example of one piece of legislation which has been used to serve both of these purposes. In 1962, when MDTA was enacted, its purpose was to meet the personnel shortage of technically skilled manpower brought about by automation. Each year since that time its administration has emphasized more and more the goal of increasing the options open to various types of disadvantaged trainees. Whether the target groups were mothers on welfare or unemployed aerospace engineers, the aim has been to increase the employability of the trainee. It may be predicted confidently that when the decreased birth rate and an expanding economy combine to produce a shortage of youth qualified to enter employment, the goal will shift to emphasize meeting the manpower needs of society.

Legislative and Administrative Lag

Society and its government almost always respond after a crisis has occurred. Our recognition of the surplus of certain types of teachers came three years after history teachers began to have difficulty getting jobs. It took another four years for certain states to stop subsidizing teacher trainees in surplus fields. It is almost certain that our reaction to the manpower implications of the decreased birth rate will come after, rather than before a crisis arises.

There are inevitable costs associated with the cyclical pattern of support for vocational education and with the fact that the cycle of support is out of phase with the manpower needs of society. One of the principal costs comes as a result of doing without well qualified vocational professionals until they can be trained. A less important, but significant cost comes from starting and stopping vocational education professions development programs.

Effects of Cyclical Demand For Vocational Teachers

The demand for vocational teachers is a derived demand, which is determined by the demand for vocational education. If the demand for vocational education is constant, the demand for vocational teachers will also tend to be constant. Teachers will need to be recruited only to fill vacancies created by death, retirement, and transfer of teachers to other occupations.

If, on the other hand, the demand for vocational education changes rapidly, the demand for vocational teachers changes even more rapidly. If the enrollment stayed constant, we would need, each year, to train 4% of the total number of teachers to fill net vacancies (calculated from Foran and Kaufman, 1971, pp. 142 and 149). If, however, the demand for vocational education increased by 4% in one year (and the teacher-pupil ratio stayed the same), we would need suddenly to double the number of vocational teachers being trained. Half of these new teachers would meet the replacement demand, while half would staff new classes. (Actually the number would more than double, since only two-thirds of new vocational teachers actually enter teaching.) If the demand increased by 8% in one year, we would need to more than triple the supply of new teachers. On the other hand, if the demand for vocational education decreased by 4% in one year, we would need no new vocational teachers. Under these conditions, the 4% of teachers not needed because of empty classes could replace the 4% who are leaving the teaching profession.

Actually the situation is far more complicated than this, because supply and demand vary greatly from one field of vocational education to another, and since a teacher of machine shop is not interchangeable with a teacher of typing. It should be clear, however, that cyclical changes in demand for vocational education complicate enormously the task of planning for and preparing the correct numbers of vocational teachers of various types.

If all vocational education were geared directly to meeting the short-term manpower needs of society, the situation would be even worse. As pointed out earlier, a 4% expansion in the health occupations could result in a 100% increase in the need for health occupations teachers.

Fortunately, vocational education as a whole never has been geared completely to meeting short-term manpower needs of society. If it had been, there would have been no vocational education at all during times of recession, and the needs of people to acquire vocational competencies would have been ignored during these periods of economic failure. Indeed, there is a tendency for the opposite to occur, as some unemployed people spend their free time in vocational education, preparing for the next employment boom, rather than sitting at home doing nothing.

As we consider the preparation of vocational teachers for work in different types of institutions, it should be noted that some institutions respond much more rapidly to changes in demand for vocational education than do others. Vocational education offered by employers responds very rapidly to changes in the labor market, dropping to near zero in times of recession and expanding very rapidly as the need increases slightly. Public school vocational education, on the other hand, responds quite slowly to employment demand changes. Instead, it tends to respond to changes in the number of students who are willing to enroll. Changes in enrollment tend to lag behind and tend not to swing as high or as low as changes in employment demand.

Methods of Providing Vocational Education

There are two basic methods of providing vocational education: on-the-job and institutional. On-the-job training (OJT) is the older of the two, but is still used extensively. In this type of training the prospective worker is assigned to an experienced worker who serves as his instructor. Training is conducted in the place where work is done, using the same materials and processes employed by experienced workers. OJT is essential for the final stages of vocational education because it is geared to the peculiarities of practice in a particular place of employment. A graduate engineer needs OJT even if he has had five years of vocational preparation in college. A second advantage of OJT is that expensive equipment and materials which are normally available at the place of work need not be duplicated in an educational institution. A third advantage is that OJT presents precisely the mileau of the workplace, which is difficult to duplicate in an educational institution. The primary disadvantages of OJT are two: the work-place is designed for work, rather than for instruction, and the content and sequence of instruction are designed to facilitate the work goals of the employer, rather than the educational goals of the trainee.

While institutional vocational education is not as old as OJT, vocational schools for priests antedate the Christian era. Occupations which have relatively low theoretical and high manipulative content tend to be taught by OJT, while the basic elements of those occupations which have higher theoretical content have been taught in a school, followed by OJT. The historical trend has been for occupations to move gradually from the former to the latter pattern of education as they become more sophisticated. Thus, during the last century, most physicians were trained on-the-job, while now it is universal to train them in schools, followed by OJT. As the theory which is necessary for work becomes more complex, the necessity for organized instruction in a "school" increases.

In the past fifty years it has become more and more common to combine institutional and on-the-job training in a different way. Instead of following a sequence of institutional training first, followed by OJT, the two types of education are alternated, with approximately equal amounts of time spent in each type of setting, and with each designed to supplement the other. This pattern is called cooperative work education or part-time cooperative education. The alternation most often involves half days in school and half days on the job, though alternations of one week or one school term are used if the school is remote from the work place. There are three key points which differentiate cooperative education from the far less desireable work-experience or work-study programs: (a) the student is under the direction of a school employee called a coordinator, who (b) insures that the student is not being exploited on the job, and (c) has the task of relating at least a part of what is being studied in school with what is being taught on the job. Cooperative work education began with the training of engineers, but it is now being used for all types of occupations. Apprenticeship, which originally was conducted entirely by OJT, now has many of the characteristics of cooperative work education, though the amount of time spent in institutional training is usually considerably less than that spent in OJT.

Institutional vocational education is offered by a wide variety of types of institutions. Public and private non-profit high schools, community colleges and four-year colleges offer it, as do private proprietary trade, business, and technical schools. Increasingly, large employers are establishing such schools for their employees, and institutional programs operated jointly by employee and employer groups are being established for the relatively small employers in the construction industry. Trade associations have established institutional vocational programs which serve the needs of small employers who cannot afford institutional programs of their own.

Cooperative work education is the most rapidly growing type of vocational education organization. OJT is growing least rapidly, largely because there is a decreasing proportion of occupations which can be learned in a short time with minimum damage to equipment, product and customer relations, and with safety to the persons involved. OJT, however, is used to fulfill residual responsibilities for vocational education. That is, if sufficient numbers of qualified employees are not produced through other training methods, employers will expand OJT to the extent necessary to meet their immediate needs. Consequently, the amount of OJT tends to change very rapidly, depending on the state of the labor market.

Vocational Education Professions Development

Vocational education of any type requires teachers and administrators. High quality vocational education also requires counselors, curriculum developers, evaluation specialists, teacher educators, and other types of professionals. This is true in a military, technical school, a training department in a large business or industry, a Manpower Development and Training Act skills center, or a vocational education department of a comprehensive high school. A capable vocational counselor can work effectively in any one of these institutional settings, as can a capable vocational teacher, administrator, etc. Consequently, any planning for development of vocational education professionals must take into account the needs of all of the types of institutions which provide vocational education. Up to now this has not been done. Instead, the needs of each type of institution have been considered separately: parallel, overlapping teacher education programs have been established to meet the needs of each institution; and the mobility of professionals from one type of institution to another (eg. from high school to skills center and vice versa) has been ignored.

In the early days of vocational education these complications had not arisen. In OJT, where the job content to be taught was very simple, any competent worker could be assigned to "break-in" a neophyte. Not until the Job Instruction Training programs of World War II was there a serious effort in this country to train OJT instructors. Now, most large companies conduct regular classes for those who supervise OJT, with special emphasis on providing instruction to minority workers, and the plumbers union has a five-year university-based training program for its instructors of apprentices and journeymen.

Similar trends have been apparent in institutional vocational education. In the early years of the twentieth century, when states and then the Federal government began to encourage vocational education in the public schools, it was common to locate a competent practitioner in an occupation and install him in a classroom or laboratory with absolutely no preparation for teaching. Gradually, pre-service training programs began to be established for teachers, but only in the past five years has there been a substantial number of programs which adequately introduce vocational education administrators to the entire field for which they are responsibile. Within the past year there are beginnings of programs to prepare educational personnel for career education, in which artificial and unnecessary conflicts between college preparatory and vocational education programs are minimized.

Nowhere is there a complete account of the needs and accomplishments in education professions development in vocational education and allied fields of study, though several recent studies have made progress in this direction. This report is an attempt to combine the results of previous studies with new data. It was commissioned by the National Education Professions Development Council and is designed to aid them in their task of making recommendations to the executive and legislative branches of the United States government.

Chapter II

Characteristics of Professionals in Vocational Education

Despite the facts that the U. S. Office of Education is charged with gathering and disseminating facts about education in this country, and that the salaries of professionals in much of public school vocational education have been reimbursed in part by the federal government for over fifty years, we know remarkably little about these professionals or about the students with whom they work. Our knowledge of vocational students comes almost exclusively from studies which ask students or former students to identify the curriculum in which they were enrolled. If the student says he was in a particular curriculum, this is accepted at face value without further checking with the school to identify the curriculum in which he was recorded. These studies indicate among other things that vocational education serves a school population that is disadvantaged socio-economically and verbally, and that in spite of these disadvantages they are less likely to drop out, and more likely to go to college, than are students in the general curriculum. And, if they do not go to college, they will earn more, have less unemployment, find jobs more quickly, and have higher job satisfaction than comparable students from the college preparatory and general curricula. (Evans, 1971). Unfortunately we know very little about why these students perform so well.

Data about vocational education professionals are even more scanty than data about their students. For many years the Federal Government has tallied the numbers of vocational education professionals whose salaries are paid in part from Federal funds. In the last five years, additional data have been collected so that we now know slightly more about this group of professionals. Virtually no data, however, are available on vocational education staff whose salaries are not supported from Federal vocational education funds. Thus we have great voids of information about vocational educators in the military, in private business and industry, in private trade and business schools, in universities, in Manpower Development and Training programs, and in private, non-profit agencies such as the Opportunities Industrialization Centers.

Characteristics of Vocational Education Professionals in Public Secondary Schools and Community Colleges

The most obvious characteristic of vocational education professionals is the rapid expansion of their numbers. Table II-1 shows that within the past three years the number of vocational teachers has increased by almost 65,000. Three-fourths of this increase of 44% has occurred in Office Occupations, Trades and Industry, and Health Occupations, and Technical Education, for which state-operated preservice programs produce practically no supply. Part F (Vocational Education) of the Education Professions Development Act has been of

Table II-1

Numbers of Federally Reimbursed Vocational Teachers by Field

	F.Y. 1968 (1)	F.Y. 1970 (1)	F.Y. 1971 (2)	Increase in 3 years	Percent Increase
Agriculture	12,262	12,420	12,910	648	5.3
Home Economics	29,402	34,225	38,105	8,703	29.6
Office Occupations	31,428	45,087	49,363	17,935	57.1
Distributive Education	8,542	10,458	11,974	3,432	40.2
Technical Education	10,276	14,241	14,750	4,474	43.5
Health Occupations	6,521	10,483	12,613	6,092	93.4
Trades and Industry	47,742	56,720	59,065	11,323	23.7
Other	892	6,736	6,540	5,648	633.2
Total, Unduplicated	146,552	190,364	211,550	64,998	44.4

1. Ferns, 1972, p.31

2. U. S. Department of H.E.W., Summary Data, Vocational Education Fiscal Year 1971.

little help, because it provides very little support for the pre-service training of professionals. Instead, it concentrates on training of experienced vocational educators. For example, Section 553 (Exchange programs, institutes and in-service education) is limited entirely to "experienced vocational education personnel". Section 552 (Leadership development) is limited to experienced vocational educators, or to those who hold a baccalaureate and are reasonably assured of employment in vocational education.

The net result appears to be that a very high proportion of these new teachers received no preparation for teaching. Unfortunately, we do not have good data on the magnitude of this problem. We do know that 12.9% of experienced vocational teachers have even less than an associate (two year) degree, and that the proportion of teachers who hold baccalaureate or higher degrees ranges from 95% for agriculture teachers to 40% for teachers of trades and industry. (See Table II-2). No data are available on whether or not the degrees which are held include preparation for teaching, nor do we know the field in which the teacher majored, whether or not it was related in any way to the subjects now being taught by that teacher.

Schill (1963, p.7) found that trades and industry teachers who had shown no inclination to acquire formal education prior to employment as teachers, were unlikely to pursue it after entering teaching. Conversely, those who had begun post-secondary education prior to teaching were likely to continue it. This finding seems likely to hold for all types of vocational teachers.

Table II-2

Federally Reimbursed Vocational Education Teachers (all levels of instruction combined) - Type of Academic Degree, By Program Specialty: 47 States and the District of Columbia - Spring, 1969 (Percent Distribution).

Type of academic degree	Total	Agriculture	Distributive education	Health Occupations	Home Economics	Office Occupations	Technical Education	Trades and Industry
All teachers [illegible]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Doctor's	.9	1.1	.9	1.8	.3	1.2	.4	.2
Master's	3[illegible]	42.3	52.4	13.4	27.7	46.2	26.7	16.1
Bachelor's	41.2	51.8	40.9	37.3	66.8	47.3	31.8	23.5
Sub-total (Baccalaureate or higher degree)	(74.2)	(95.2)	(94.2)	(52.5)	(94.8)	(94.7)	(58.9)	(39.8)
Other degrees	12.9	2.5	3.2	38.0	3.5	3.5	11.2	21.8
None	12.9	2.3	2.6	9.5	1.7	1.8	29.9	38.4

Source: U. S. Department of H.E.W. Vocational Education: Characteristics of Teachers and Students, 1969, p.18

Approximately 30% of the high school graduates of high school vocational education curricula go on to post-secondary education, but few of them enter vocational teaching. Although national data are lacking, the results of several state-wide studies (Gibbs, 1970: Kiefer, 1972: Thompson, 1972) indicate clearly that only vocational agriculture teachers tend to have a background of high school level vocational education. Vocational education professional personnel from other fields of study tend to come from the general and college preparatory curricula. This seems to be somewhat of an anomaly, for the socio-economic background of all types of vocational education professional personnel appears to be more nearly like that of high school vocational students (blue-collar) than like that of college preparatory students (middle-class). One possible line of inquiry into this phenomenon could be built around the fact that less than one-fifth of vocational educators report that they planned to enter teaching of any type when they left high school. (Thompson, 1972, p.63). It also may be closely related to the fact that while vocational education students are representative of the racial composition of the nation, as a whole, racial minorities appear to be virtually unrepresented on the vocational education professional staff in many different occupational fields.

Perhaps the most interesting demographic characteristic of vocational education personnel is their low degree of geographic mobility (Gibbs, 1970 and Kiefer, 1972). Not only do they tend to have lived within one hundred miles of where they are teaching, but well over half of them did not change their place of residence when they accepted employment in a community college occupational program (Thompson, 1972, p.121).

Over half of the male community college occupational instructors in Thompson's study (1972, p.98) had been employed by business and industry in one or both of the jobs they had held immediately prior to entering their current educational employment. The dominant career pattern, however, was one of high school graduation, followed by a baccalaureate degree, employment in business and industry, and employment in education, in that order. If we look at employment in education alone, most commonly the first educational employment was in a secondary school, followed by community college teaching. Similar career data are not available for occupational instructors who currently are teaching in secondary schools, but a similar pattern, minus the final step, seems likely.

In post-secondary vocational education, almost all staff recruitment is mediated by friends or relatives within the hiring institution or by co-workers who learn of the availability of the educational position. Advertisements of the "Position wanted" or "Position available" type are rarely used, though the latter is very effective when it is used. (Gibbs, 1970 and Thompson, 1972).

The data on low geographic mobility, career sequence, and methods of staff recruitment suggest a variety of probable consequences:

a. A continued low amount of minority group employment is likely, since minority groups are rarely employed in vocational teaching and hence cannot make friends within their minority group aware of available jobs. Even worse, past discrimination in education and in employment has resulted in an inadequate supply of qualified minority personnel from which schools can recruit.

b. Content of vocational education courses is unlikely to include methods and processes used by workers outside the immediate geographic area.

c. Low geographic mobility of students is likely to continue, in part because they may be ill-equipped for employment in occupations where methods and processes are different from one locality to another.

d. An unnecessarily low level of occupational and pedagogical competence of instructors is almost certain, because of the limited labor market area from which they are recruited.

Chapter III

Legislation

The Education Professions Development Act (EPDA) was enacted in June 1967 to "improve the quality of teaching and to help meet critical shortages of adequately trained personnel", (U.S. Department of H.E.W., 1969). The passage of this act was a recognition by Congress of the need to change the emphasis of legislation and subsequent funding to the development of human resources rather than physical plants.

The EPDA is divided into six parts (see figure III-1), only one of which deals specifically with vocational education personnel. Since each of the six parts could, however, be used for programs affecting vocational education, all six parts are discussed briefly. Part A consists of three major sections. Section 502 makes provisions for appointment of a National Advisory Council on Education Professions Development. In section 503 the Commissioner is directed to "appraise the Nation's existing and future personnel needs in the field of education.....and the adequacy of the Nation's efforts to meet these needs", and to "prepare and publish annually a report on the education professions". (U.S. Department of H.E.W., 1969.) The objective of Section 504 is to attract qualified persons to the field of education.

The purpose of Part B is to attract and qualify teachers through the Teacher Corps (Part B-1), and through grants made to states (Part B-2) to attract and qualify teachers to meet critical teacher shortages.

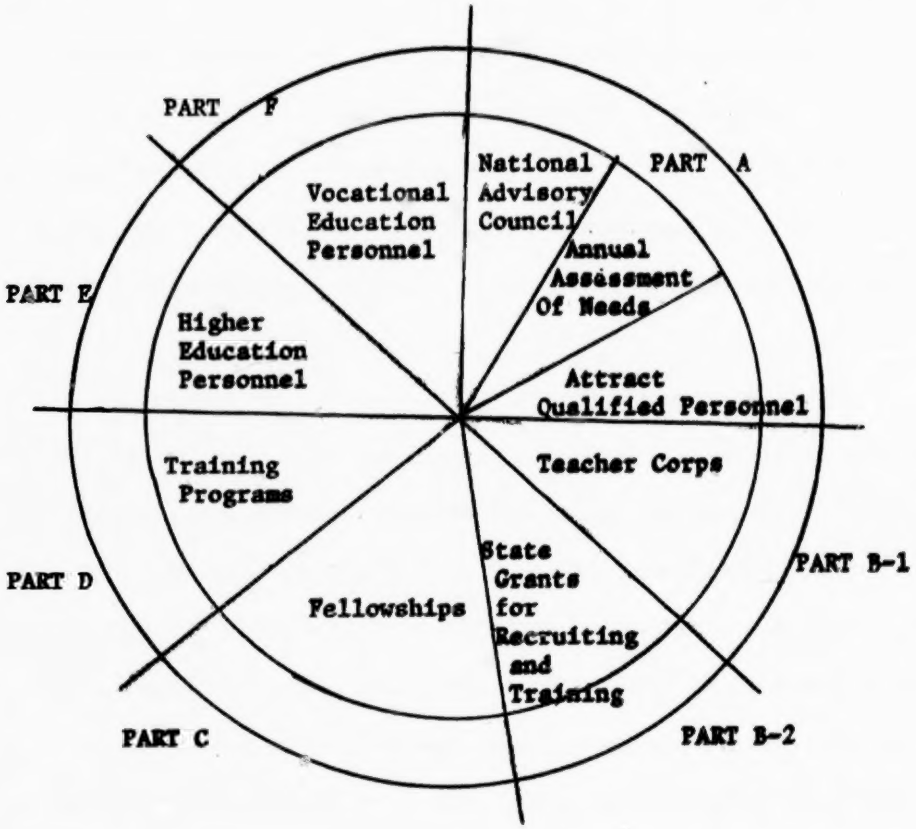
PART F
Vocational Education Personnel
National Advisory Council
PART A
Annual Assessment Of Needs
PART E
Higher Education Personnel
Attract Qualified Personnel
Training Programs
Teacher Corps
PART B-1
PART D
State Grants for Recruiting and Training
Fellowships
PART C
PART B-2

Figure III-1

EDUCATION PROFESSIONS DEVELOPMENT ACT

This pie chart graphically portrays the six parts of the Education Professions Development Act. It is reprinted from the February 1969 issue of American Education.

The objective of Part B-2 is to meet critical quantitative teacher shortages through programs designed to recruit persons not employed in teaching. The recruits are provided with short term pre-service training and continuing in-service training to qualify them as teachers and teacher aides.

The Commissioner is authorized to allocate fellowships through Part C for the purpose of "improving the quality of education by improving the quality of the education of persons who are pursuing or who plan to pursue a career in elementary and secondary education or post-secondary vocational education". (U.S. Department of H.E.W., 1969)

Part D provides grants to improve training for personnel serving or preparing to serve in educational programs other than higher education and Part E to improve training for higher education personnel.

Training and Development Programs for Vocational Educational Personnel, Part F, was added to the EPDA by Title II of the Vocational Education Amendments of 1968. There are three major sections in Part F. Section 552, Leadership Development Awards, is to enable experienced vocational educators to spend full-time in advanced study of vocational education. Stipends are paid to persons such as administrators, supervisors, teacher educators, researchers, and instructors in vocational education programs in order to meet the needs in all States for qualified vocational education personnel. Institutions of higher learning are encouraged, through grants made by the Commissioner, to develop or maintain comprehensive graduate programs in vocational education.

Section 553, referred to as Cooperative Arrangements, authorizes the Commissioner to make grants to State Boards of Vocational Education to pay the cost of carrying out cooperative arrangements for training or retraining of experienced vocational education personnel, in order to strengthen the programs of schools offering vocational education. These cooperative arrangements may be between schools and private business or industry, commercial enterprises, or with other educational institutions.

The grants made under this section may be used for: (1) the exchange of vocational education personnel with skilled personnel in industry; (2) in-service training programs for vocational education personnel to improve the quality of instruction, supervision, and administration of vocational education programs; and (3) short term and regular session pre-service and in-service programs or other training programs designed to improve the qualifications of persons entering or reentering the field of vocational education.

In Section 554 the Commissioner is encouraged to give special consideration to programs designed to familiarize teachers with new curricular materials in vocational education. No authorization for funding is included in Section 554.

Part F of the EPDA provides discretionary funding and technical assistance to State Boards for Vocational Education and institutions of higher education to strengthen their efforts for developing and improving the skills and competencies of professional personnel in order to raise the level and increase the effectiveness of vocational education. Some general program objectives of the Vocational Education Personnel Program are:

> "To bring about reform in vocational education by improving the quality and increasing the supply of leadership personnel; revamping, updating, and upgrading vocational teacher education programs; improving the competencies and teaching techniques of existing staff; preparing vocational teachers to understand and meet the needs of disadvantaged and handicapped students; and insuring that each State has a functional and effective system for personnel development which will be responsive to the needs for, and maintain the supply of, adequate personnel in all areas of career and vocational education." (BEPD, 1971)

The History of Part F

Although Part F was enacted in late 1968, its first funding was provided in Fiscal Year 1970 (the year beginning July 1, 1969 and ending June 30, 1970). Thus it has been in operation approximately three years. During this period it has had approximately $19 million to spend ($5.2 million in Fiscal Year 1970, and $6.9 million in each of Fiscal Years 1971 and 1972). Authorizations for Part F during the same period totalled $95 million, so the appropriations amounted to well under 20% of authorizations.

The number of vocational education professional personnel increased from 146,552 in Fiscal Year 1968 to 211,550 in Fiscal Year 1971, and is expected to increase to 242,000 in Fiscal Year 1973 (Burkett, 1972). Thus the annual amount of Part F money for professional development of each of these staff members has increased from zero in Fiscal Year 1968 to approximately $33 in Fiscal Year 1971. It is believed that this amount will increase sharply to about $50 per teacher per year in Fiscal Year 1973.

Another measure of the increase of the effect of Part F is the increase in the number of operational grants to states. In Fiscal Year 1970 fourteen states received such grants. The number increased to 24 in Fiscal Year 1971 and to 49 in Fiscal Year 1972 (Ferns, 1972). In theory, at least, an operational grant is awarded only after a state has developed adequate plans for vocational education personnel development. Each state has been strongly urged to establish a unit under the State Board for Vocational Education with the sole function of planning and encouraging the development of vocational education professionals. In February, 1972, approximately half of the states had one or more persons assigned full-time to such EPD units.

Administration

Administration of most parts of the Education Professions Development Act is conducted through the Bureau of Educational Personnel Development* in the U. S. Office of Education. Members of BEPD feel that development of vocational education personnel can best be handled through a structure that is responsible for professional development activity for all of education. This association with other areas of education in BEPD appears to have been one of the few places within USOE where vocational education has enjoyed a continuing professional relationship with "academic" areas in education. In other parts of USOE there tends to be a continual tug of war between vocational education and other parts of education which results in wide fluctuations in the size of the Bureau of Adult, Vocational and Technical Education (BAVTE) as other groups are more or less successful in siphoning off portions of its staff and responsibilities. Not only have Part F administrators maintained good relationships within BEPD, but they have kept good contacts with the BAVTE, partially because of the traditional fraternity among vocational education professionals. BEPD very wisely chose highly respected, but innovative vocational educators to head its administration of Part F, and thus secured respect, if not full acceptance of its policies among other vocational educators. Unfortunately, the average tenure of these chiefs has been only 15 months. Fortunately continuity has been maintained through their subordinates, the program officers. Reasons for the rapid turnover of chiefs could not be ascertained fully. BAVTE has been advised, if not fully consulted, prior to the initiation of new programs, and its advice has been sought periodically in the review of state plans of action and of sub-proposals submitted by states.

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* In 1971, renamed the National Center for the Improvement of Educational Systems (NCIES). However, in this report "Bureau of Educational Personnel Development" (or BEPD) will be used since this nomenclature is familiar to most.

All is not rosy, however. On July 1, 1973, activities under Section 553 of Part F were decentralized to the ten USOE regional offices. This makes consultation markedly more difficult, not only with BAVTE, but with the remaining parts of BEPD (NCIES). Further, this action tends to destroy the strong central planning thrust which has so effectively used Federal funds as a lever to move the states in desirable directions.

A further communication problem between BEPD and BAVTE is caused by their failure to use the same coding system for data about vocational education personnel. BAVTE is interested in data on the number of teachers trained in each field of specialization: agriculture, distributive education, etc. BEPD tends to report in terms of characteristics of the trainee: age, ethnic group, level of prior education, etc. Both types of data are needed, should be reported, and used.

It is the view of BEPD that an office whose main concern is one of personnel development, rather than of administration of a curriculum area, can devote its full attention to the problems of teacher education. Innovative ideas and methods of development can be shared and utilized across academic fences more readily in a structure concerned exclusively with development. Vocational educators can win the respect of other areas of education because they meet to solve common problems. Low priority activities in other fields can be eliminated and funds diverted to vocational education when its needs are greater than those of other areas. This philosophy of allocating non-earmarked funds to vocational education has been highly advantageous to vocational education personnel development during a period when supply has exceeded demand in other teaching fields, though it might have been highly disadvantageous if the shoe had been on the other foot.

Contrariwise, most members of the BAVTE are of the opinion that personnel development programs (and budget) should be administered through their Bureau, rather than BEPD. Members of the BAVTE staff feel that the interests of vocational education personnel development could best be served by an administrative structure which has vocational education as its main concern. This was the structure which existed prior to the passage of the Education Professions Development Act. When the EPDA was enacted, the consolidating forces of the 1968 Vocational Education Amendments were just coming into effect. Prior to 1969, education professions development within BAVTE (actually the predecessor to the present BAVTE) was in a sorry plight. Largely autonomous branches dealt separately with agricultural education, trade and industrial education, and the other parts of vocational education. None of these branches was very serious about or well staffed to do much about education professions development even within its narrow sphere of interest. And there was no provision for the development of administrators, counselors, researchers, or other personnel whose training needs transcended those of the self-contained branches.

On the surface, BAVTE appears to be in much better condition today than it was when the EPDA was passed, and recent congressional initiatives will give it considerably greater possibilities in the near future. Due to the impending reorganization of USOE mandated by the Congress, research and development efforts will be present in ways which could strengthen vocational education professions development.

But doubts remain. Even though the responsibility for vocational education professions development under EPDA has been assigned to BEPD for more than three years, BAVTE has retained a skeleton force charged with essentially this same responsibility under the vocational education acts. The staff consists of one person and a totally inadequate budget, despite the fact that teacher training is clearly specified as one of the purposes to which vocational education act funds should be devoted. This staff person works with a coordinating committee on EDP representing each of BAVTE's three divisions. No one in the Division of Vocational and Technical Education has EPD as a full-time responsibility. Instead,EPD is the responsibility of each operations group, much as it was in the pre-1969 period. No discretionary funds for EPD are controlled by DVTE (Division of Vocational and Technical Education), but are sent out to the states with little or no guidance based on centralized planning. Even the leverage provided by review and approval of state plans for vocational education EPD is absent, since these plans are reviewed at the regional level by officials who are not responsible to DVTE. This at least raises some question as to whether or not vocational education personnel development from EPDA funds would receive the same priority under BAVTE administration that it has received under BEPD.

Expenditures

The principal expenditures under Part F of the EPDA have been made for two programs: Leadership Development and Grants to State Boards of Vocational Education. The former comes under Section 552 of EPDA, and has consisted largely of support for doctoral students who are being prepared for leadership positions in vocational education. Table III-1 identifies the 18 states in which are situated the 18 "comprehensive" graduate programs which were selected as having proposed the best combination of formal course work and supervised experience on the job. Some states which did not have an institution which received one of these programs have criticized the allocation of funds on the ground that they did not receive their "fair share". Although this is a spurious argument, Table III-1 shows the "fair share" received by the 18 states. It is worth noting that California, Pennsylvania and Texas did not receive their "fair share" even though they received awards.

The "fair share" argument is spurious on two grounds. First, most states simply do not have institutions which simultaneously meet

Table III-1

Education Professions Development Act

Allocation of Funds from Section 552

(Leadership Development)

Fiscal Year 1972

	Percent of total # of vocational teachers(1)	Percent of 552 funds received	Amount received*	Number of Fellows Funded
California	10.81%	8.33%	$140,400	18
Colorado	1.17	6.48	109,200	14
Connecticut	1.44	5.55	93,600	12
Georgia	2.91	6.48	109,200	14
Illinois	3.22	6.48	109,200	14
Kansas	.95	3.70	62,400	8
Kentucky	1.30	3.70	62,400	8
Michigan	3.46	3.70	162,400	8
Minnesota	2.25	6.94	117,000	15
Missouri	1.68	3.70	62,400	8
New Jersey	1.91	7.87	132,600	17
North Carolina	3.93	6.84	109,200	14
Ohio	3.73	6.84	109,200	14
Oklahoma	1.01	6.84	109,200	14
Oregon	1.09	6.84	109,200	14
Pennsylvania	4.60	3.70	62,400	8
Tennessee	1.41	3.70	62,400	8
Texas	4.36	3.70	62,400	8
Other States	48.72	----	------	-
	100.00%	100.00%	$1,684,800*	216

* does not include dependency allowance of $125,070.00, but does include trainee stipends of $1,015,200.00. Universities received $669,600.00.

(1) Burkett, 1972

the requirement of the law for comprehensive coverage of vocational education, offer doctorates related to vocational education, and are interested in revising their program to provide for effective leadership development. Secondly, the important questions are from where were the trainees recruited and where will they accept employment. The latter of these questions is not yet answered, but the former was carefully considered by the BEPD staff. They allocated doctoral traineeships to each state and allowed the state director to nominate people for these vacancies with only the provision that they had to be acceptable in one of the 18 approved programs. The criteria used by the state directors appear to have been somewhat different, but Table III-2 shows the result in terms of distribution by state of the 216 doctoral fellowships awarded. The distribution formula used by BEPD was based on modified 1970 ratios from the Vocational Education Act formulas. One hundred and sixty fellowships were awarded in 1970 and an additional 56 were added in 1971. Table III-2 shows that because one fellowship is the least that can be awarded, states with a small proportion of vocational teachers tended to get more than their share of fellowships. Also, states with universities that received leadership development grants were slightly more likely to get a greater number of fellowhip allocations. Actually, the number of doctorates received may be more or less than 216. Some students have dropped out to take leadership positions at salaries they could not afford to refuse. These dropouts were replaced by people who could continue for the remaining period of the original

Table III - 2

Education Professions Development Act

Fellowships allocated and used from Section 552 (Leadership Development) Fiscal Year 1972

	Percent of Total Vocational Teachers (1)	Number of Fellowships Allocated (2)	Percent of Fellowships Allocate (2)	Number of Fellowships used (2)	Percent of Fellowships used by State (2)
Alabama	1.50%	4	1.85%	3	1.39%
Alaska	.13	1	.46	1	.46
Arizona	.71	2	.92	2	.92
Arkansas	1.02	3	1.39	2	.92
California	10.81	17	7.87	22	10.19
Colorado	1.17	2	.92	2	.92
Connecticut	1.44	3	1.39	3	1.39
Delaware	.34	1	.46	1	.46
Florida	3.70	8	3.70	8	3.70
Georgia	2.91	6	2.78	6	2.78
Hawaii	.35	1	.46	1	.46
Idaho	.40	1	.46	1	.46
Illinois	3.22	9	4.17	11	5.09
Indiana	1.67	5	2.31	5	2.31
Iowa	1.25	3	1.39	3	1.39
Kansas	.95	2	.92	2	.92
Kentucky	1.30	4	1.85	3	1.39
Louisiana	1.63	4	1.85	3	1.39
Maine	.51	1	.46	1	.46
Maryland	.94	4	1.85	3	1.39
Massachusetts	4.63	7	3.24	5	2.31
Michigan	3.46	8	3.70	8	3.70
Minnesota	2.25	4	1.85	6	2.78
Mississippi	1.11	2	.92	2	.92
Missouri	1.68	6	2.78	5	2.31

Table III - 2 continued

Montana	.40	1	.46	1	.46
Nebraska	.74	2	.92	2	.92
Nevada	.41	1	.46	1	.46
New Hampshire	.38	1	.46	1	.46
New Jersey	1.91	6	2.78	8	3.70
New Mexico	.35	1	.46	1	.46
New York	10.94	16	7.40	16	7.40
North Carolina	3.98	7	3.24	6	2.78
North Dakota	.39	1	.46	1	.46
Ohio	3.73	9	4.17	10	4.63
Oklahoma	1.01	3	1.39	3	1.39
Oregon	1.09	2	.92	2	.92
Pennsylvania	4.60	11	5.09	11	5.09
Rhode Island	.20	1	.46	1	.46
South Carolina	1.76	3	1.39	3	1.39
South Dakota	.33	1	.46	1	.46
Tennessee	1.41	5	2.31	4	1.85
Texas	4.36	12	5.56	11	5.09
Utah	.85	1	.46	1	.46
Vermont	.39	1	.46	2	.92
Virginia	3.13	5	2.31	5	2.31
Washington	2.75	2	.92	3	1.39
West Virginia	.81	3	1.39	2	.92
Wisconsin	3.08	4	1.85	5	2.31
Wyoming	.39	1	.46	0	----
District of Columbia	.13	1	.46	1	.46
Guam	.05	1	.46	1	.46
Puerto Rico	1.31	3	1.39	3	1.39
Virgin Islands	.04	1	.46	0	----
American Samoa	----	1	.46	0	----
Pacific Trust Territory	----	1	.46	1	.46
TOTALS	100%	216	100%	216	100%

160 Fellowships awarded in 1970, and an additional 56 awarded in 1971, Total 216.

1. Burkett, 1972
2. BEPD statistics, 1972 (Some states were awarded, and used additional fellowships because other states did not use some of the fellowships to which they were entitled).

fellowship. Some schools will thus award about twenty percent more doctorates than the number of fellowships they were allocated. According to BEPD, the 216 awards are equal to nine percent of the total number of teacher educators, state administrators and supervisors, local directors and guidance personnel in public school vocational education in this country, but this is only a tenth of one percent of the number of teachers. If there are presently only 2,000 leadership personnel among 200,000 vocational educators, leadership development programs would appear to be needed.

The second major program under Part F of EPDA consisted of grants to state boards of vocational education for federally approved programs of professional personnel development. Table III-3 shows the distribution of these funds for Fiscal Year 1972. Only Maryland and Virginia did not receive funds. In nearly every case where the percentage of money received (column 2) was higher than the percentage of vocational teachers (column 3) that state had an unusually effective state-wide program of vocational education personnel development.

Table III-3

Education Professions Development Act
Allocation of Funds From Section 553
(Grants to State Boards of Vocational Education)
Fiscal Year 1972

	Percent of total vocational teachers (1)	Percent of 553 funds actually received	Amount proportionate to number of vocational teachers	Amount actually received (2)
Alabama	1.50	.52	$ 72,751.95	$ 25,000
Alaska	.13	.72	6,305.16	35,000
Arizona	.71	1.24	34,435.92	60,000
Arkansas	1.02	.72	49,471.33	35,000
California	10.81	9.63	524,299.05	467,130
Colorado	1.17	1.36	56,746.52	66,000
Connecticut	1.44	1.96	69,841.87	95,000
Delaware	.34	1.55	16,490.44	75,000
Florida	3.70	1.55	179,454.81	75,000
Georgia	2.91	5.77	141,138.78	280,000
Hawaii	.35	.72	16,975.46	35,000
Idaho	.40	1.03	19,400.52	50,000
Illinois	3.22	5.30	156,174.18	257,000
Indiana	1.67	.82	80,997.17	40,000
Iowa	1.25	.72	60,626.62	35,000
Kansas	.95	.72	46,076.23	35,000
Kentucky	1.30	3.05	63,051.69	148,000
Louisiana	1.63	.89	79,057.11	43,000
Maine	.51	.72	24,735.66	35,000
Maryland	.94	---	45,591.22	------
Massachusetts	4.63	2.72	224,561.01	132,000
Michigan	3.46	.72	167,814.49	35,000
Minnesota	2.25	3.26	109,127.92	158,000
Mississippi	1.11	1.03	53,836.44	50,000
Missouri	1.68	1.03	81,482.18	50,000
Montana	.40	.72	19,400.52	35,000
Nebraska	.74	.72	35,890.96	35,000
Nevada	.41	1.55	19,885.53	75,000
New Hampshire	.38	.72	18,430.49	35,000
New Jersey	1.91	4.84	92,637.48	235,000
New Mexico	.35	.72	16,975.45	35,000
New York	10.94	5.92	530,604.22	287,000

1. Burkett, 1972.
2. BEPD, 1972.

Table III-3 continued

North Carolina	3.98	.72	193,035.17	35,000
North Dakota	.39	.72	18,915.50	35,000
Ohio	3.73	6.23	180,909.84	302,000
Oklahoma	1.01	4.35	48,986.31	211,000
Oregon	1.09	2.51	52,866.41	122,000
Pennsylvania	4.60	1.03	233,105.98	50,000
Rhode Island	.20	.72	9,700.26	35,000
South Carolina	1.76	1.03	85,362.28	50,000
South Dakota	.33	.72	16,005.42	35,000
Tennessee	1.41	.93	68,386.83	45,000
Texas	4.36	7.09	211,465.66	344,000
Utah	.85	.72	41,226.10	35,000
Vermont	.39	.72	18,915.50	35,000
Virginia	3.13	---	151,809.06	------
Washington	2.75	2.16	133,378.57	105,000
West Virginia	.81	1.20	39,286.05	58,000
Wisconsin	3.08	.72	149,384.00	35,000
Wyoming	.39	.72	18,915.50	35,000
District of Columbia	.13	3.71	6,305.16	180,000
Guam	.05	.31	2,425.06	15,000
Puerto Rico	1.31	.62	63,536.70	30,000
Virgin Islands	.04	.52	1,940.05	25,000
American Samoa	---	.31	---------	15,000
Pacific Trust Territories	---	.31	---------	15,000
Totals	100.00	100.00	$4,850,130.00	$4,850,130

The Vocational Education Amendments of 1968

Ferns and Voelkner (1972) identify the Vocational Education Amendments of 1968 as particularly significant because the Amendments direct comprehensive attention to vocational education personnel development.

The Vocational Education Amendments consist of three Titles: Title I - Amendments to the Vocational Education Act of 1963; Title II - Training and Development Programs for Vocational Education Personnel; and Title III - Miscellaneous Provisions. Title II is an amendment to the Higher Education Act of 1965 which added Part F to the Education Professions Development Act. Part F was discussed earlier in this chapter. Title III contains no significant reference to personnel development. Virtually every part of Title I contains specific or implied provisions for personnel development in vocational education:

Title I, Part B, State Vocational Education Programs, makes reference to personnel development in Section 122 (a) (8), "grants to States.....may be used.....for ancillary services and activities to assure quality in all vocational education programs, such as teacher training, and supervision, and improved State administration and leadership". Also, in Title I, Part B, Section 123 (a) (7), the Commissioner is directed to approve State Plans if the plan "provides minimum qualifications for teachers, teacher trainers, supervisors, directors, and other personnel having responsibilities for vocational education in the State and the policies and procedures developed to improve the qualifications of such personnel". This can be interpreted as an encouragement of support for pre-service education to enable teachers to meet minimum qualifications and for improvement of staff qualifications.

Again, in Part C, of Title I, Section 132 (2), Research and Training in Vocational Education, the use of Federal funds is authorized for in-service training of personnel through "training programs designed to familiarize persons involved in vocational education with research findings and successful pilot and demonstration projects in vocational education".

Under Title I, Part D, Exemplary Programs and Projects, Section 143 (a) (2) (G), grants are authorized to pay for all or part of the cost of "programs or projects at the secondary level to motivate and provide preprofessional preparation for potential teachers for vocational education".

Title I, Part F, Consumer and Homemaking Education, Section 161 (b) (1) (B) includes Federal grants to States to: "encourage preparation for professional leadership", and in Section 161 (b) (2) provisions for "ancillary services, activities and other means of assuring quality in all homemaking education programs, such as teacher training and supervision, curriculum development research, program evaluation, special demonstration and experimental programs, development of instructional materials, provision of equipment and State administration and leadership."

In Section 173 (a) (4) of Part G, Title I Cooperative Vocational Education Programs, States are required to submit plans that certify "ancillary services and activities to assure quality in cooperative work-study programs are provided for, such as pre-service and in-service training for teacher coordinators, supervision, curriculum materials, and evaluation".

Under Title I, Part I, Curriculum Development in Vocational and Technical education, funds are appropriated to "train personnel in curriculum development".

Although provisions for support of extensive personnel development in vocational education can be found in virtually every part of Title I of the Amendments, there is virtually no evidence that these Parts have been utilized to any significant extent for personnel development. One excuse for this is that there has not been enough money for other phases of Title I.

There have been bitter complaints by vocational educators that the appropriations for the 1968 Amendments have never approached the level of authorization. Table III-4 presents a comparison of authorizations and appropriations for those parts of the Vocational Education Amendments of 1968 which contain provisions for vocational education personnel development.

Despite the fact that appropriations have rarely been more than 50% of authorizations, there has been a consistent trend of increased appropriations. While the dollar amounts of these

Table III-4

Authorizations vs. Appropriations

For Parts of the Vocational Education Act of 1968 Which Include Personnel Development
(in millions of dollars)

	Fiscal Year 1969		Fiscal Year 1970		Fiscal Year 1971		Fiscal Year 1972	
	Authorized	Appropriated	Authorized	Appropriated	Authorized	Appropriated	Authorized	Appropriated
Vocational Education Amendments 1968 Title I								
Permanent Programs (parts B and C)	$355.0	$248.2	$565.0	$320.1	$675.0	$352.7	$675.0	$383.8
Exemplary Programs (Part D)	15.0	---	57.5	13.0	75.0	16.0	75.0	16.0
Consumer and Home-making (Part I)	---	---	25.0	17.5	35.0	21.3	50.0	25.6
Cooperative Vocational Education (Part G)	20.0	---	35.0	14.0	50.0	18.5	75.0	19.5
Curriculum Development (Part I)	7.0	---	10.0	.9	10.0	4.0	10.0	4.0
Vocational Education Amendments Title II Training and Development (Part F EPDA)	25.0	---	35.0	5.75	40.0	6.9	40.0	6.9
Totals	$422.0	$248.2	$727.5	$371.25	$885.0	$418.5	$925.0	$455.8

appropriations probably have been low compared with the needs of vocational education, the Bureau of Adult, Vocational and Technical Education apparently has failed to establish guidelines to encourage the states to use these appropriations for the purpose of personnel development or to identify the ways in which the states have used state or federal funds for this purpose. Certainly the need for personnel development in vocational education has been identified and well documented. Why then has the BAVTE failed to take significant action on the opportunities presented in Title I?

As mentioned in Chapter IV, the BAVTE maintains a small staff (one person) concerned specifically with teacher education. One assumes then that the BAVTE depends on the BEPD to assume responsibility for all personnel development in vocational education. The BEPD, however, has authority to administer Title II (Part F of EPDA) only. Clearly, the responsibility for administration of Title I lies with the DVTE, and there is little or no evidence that it is being utilized adequately to resolve problems of vocational education personnel development. Indeed, virtually the only visible evidence of EPD leadership from DVTE in the last two years was the brief 1971 National Conference on Comprehensive Vocational Education Personnel Development and Utilization, the report of which has been delayed for more than a year.

Manpower Development and Training Act

When the Manpower Development and Training Act (MDTA) was passed in 1962 the stress was on providing opportunities for persons who were technologically unemployed to prepare for vacant positions in other occupations. A certain amount of emphasis continues to be placed on this goal, but almost the entire budget is now spent on retraining the poor, especially the urban poor. When controversy arose as to the government agency which would administer the program, a compromise was worked out which places primary responsibility for institutional (in-school) training in the hands of the Secretary of Health, Education and Welfare, and the responsibility for almost everything else under the Secretary of Labor. Since the decision as to the proportion of funds to be spent on institutional training remains with the Secretary of Labor, his voice is clearly a dominant one.

Title III, Section 309 of the 1968 Amendments to the MDTA provides that the two Secretaries ".....shall provide.....training for specialized and other personnel and technical assistance which is needed in connection with the programs established under this Act or which otherwise pertains to the purpose of this Act". Two percent of the appropriation for Titles I, II, and III is reserved for training of personnel and for technical assistance.

Two percent of this appropriation amounts to almost sixteen million dollars each year. Of this amount, some twenty percent ($3.5 million in Fiscal Year 1972) is transferred to the Secretary of H.E.W., who spends four-fifths of this money ($2.8 million in Fiscal Year 1972) on the Area Manpower Institutes for Development of Staff (AMIDS). This program is discussed in greater detail in Chapter IV, but the important point here is that this is the sole significant EPD program operated under MDTA. Little is known of what happens to the remainder of the more than $17 million earmarked for "training and assistance" beyond the fact that about $2 million per year is distributed to the regional offices of the Department of Labor. Presumably more than $10 million is spent each year as the central office of D.O.L directs. Apparently there are no statistics on the proportion of funds used for Training and for Technical assistance, nor, of course, on the portion of training which might be classified as EPD. In Fiscal Year 1973 these amounts will be reduced slightly, but DOL has plans to combine this training and technical assistance money with that provided through Job Corps, the Emergency Employment Act, and Unemployment Insurance. The office administering these funds would be responsible for all training and technical assistance in DOL, and, would for the first time be able to plan and be accountable for these funds.

Health Occupations Educational Personnel Development

The term "health occupations" was first used by vocational educators just after W W II. Since several of the health related occupations were becoming recognized as skilled or technically oriented occupations, several states provided funds for the "health occupations" from the

Trades and Industry category of the George-Barden Vocational Education Act of 1946. But it was not until 1956 when the Health Amendments Act was passed and its Title III became Title II of the George-Barden Act that specific funds were appropriated for the health occupations.

Title II of the George-Barden Act of 1956 set the stage for what has become the area of vocational education with the least EPD coupled to its training programs. Whereas other vocational programs were permitted under the Act to provide both in-service *and* pre-service education programs, the health occupations were explicitly limited to the funding of *in-service* education programs unless they could participate in pre-service programs designed for and conducted by Trades and Industries personnel. Federal administrative actions and the lack of prescriptive legislation have continued to relegate health occupations teacher education programs to a tertiary role regardless of the section of the Department of Health, Education and Welfare from which they have been funded.

While the enactment and subsequent implementation of (a) the Vocational Education Act of 1963, (b) the Nurse Training Act of 1964, and (c) the Allied Health Professions Personnel Training Act of 1966 (each with their amendments) provided for the funding of health occupations education programs, this area of need appears to have been given lesser priority than other types of EPD programs. Part B monies of the vocational acts were available to the states for their discretionary use in teacher preparation, but comparatively little was ever done in the health occupations area. Indeed, we were unable to find any explicit policy statements or recommendations from the BAVTE, or the BEPD, to the states urging them to develop teacher education programs in this occupational area.

Again, funding was available under Public Law 89-751, the Public Health Service Act: ".....to cover the cost of traineeships for the training of allied health professions personnel to teach health services to technicians or in any of the allied health professions, to serve in any of such professions in administrative or supervisory capacities, or to serve in allied health professions specialities...". (Similar wording or intent is continued in the Health Training Improvement Act of 1970 and in the Nurse Training Act of 1971 under which the majority of the current allied health funding is found.), but priority emphasis was given to the preparation of additional skilled specialists or to the upgrading of those already trained. In the implementation of these latter acts there appears to have been a philosophy which said: If one receives additional training in an occupational skill area, he or she will be able to teach that occupation.

That the "health industry" is either the first or second largest industry in the United States points up the need for an educational system capable of meeting both the industry's manpower needs and the educational systems needs for teachers to prepare the manpower. We repeat, however, that while health professions and occupations training is the largest single beneficiary of educational support from the Federal government, it is simultaneously the area with the least education professions development coupled to its training programs. It has long been accepted as a basic principle that when new educational programs are instituted or old programs expanded, an adequate program of education personnel development should accompany them. This principle does not appear to have been followed in Federal legislation or administration of health occupations programs. Indeed, "The shortages of competent faculty training programs at all levels probably constitute the greatest obstacle to the improvement and enlargement of educational programs for the allied health professions. As educational programs enlarge and new programs are added, the demand for teachers mounts". (Report to the President and Congress, 1969, p.93).

Chapter IV will point out some of the ways in which the BEPD, BAVTE, Regional Medical Programs, Public Health Service Bureau of Health Manpower Education, and others have recognized the need for education development in health, but every indication is that this remains by far the most important shortage field related to vocational education. It should be pointed out here, however, that responsibility must be taken by some group, perhaps initiated by BEPD, to coordinate EPD for the 117 separate health manpower training programs or authorizations, 83 of which were exclusively for health occupations training, being implemented as recently as 1969 among at least twelve cabinet Departments, Commissions, or Agencies. (Health Manpower Source Book, 1970). Diffusion of responsibility for these programs appears to be one of the principal reasons why so little progress has been made in education personnel development in this key area of instruction.

Chapter IV

Programs for Personnel Development

The focus of responsibility for vocational teacher education is difficult to identify. The federal constitution and many state constitutions appear to designate the state as having ultimate responsibility for public education and hence for public teacher education. The first federal vocational education legislation clearly specified that the responsibility for teacher education was in the hands of the State Boards of Vocational Education, but this responsibility was often not exercised. Most of the literature on teacher education now suggests that prime responsibility for providing pre-service teacher education belongs to universities, while prime responsibility for in-service teacher education rests with the employing school.

Since the passage of the Education Professions Development Act in 1967, the federal government has assumed a markedly increased (but still relatively minor) responsibility for teacher education of all types. Finally, the individual teacher, counselor, or administrator, as a professional, must assume a considerable degree of responsibility for his or her own professional development, with the assistance of the appropriate professional organizations.

It is often the case that when responsibility is diffused, the quality of performance is poor or is unmeasured. This appears to be the case with different aspects of vocational teacher education.

Certification of Teachers

While the responsibility for designing and providing vocational teacher education is diffuse, the responsibility for determining whether or not it has been achieved appears at first glance to be specified clearly. Each state department of vocational education, acting alone or through another state agency, has assumed responsibility for certifying or licensing vocational teachers. This system of certification typically involves two parts: determination of competence in the subject matter to be taught and determination of competence as a teacher. Both parts are designed to assure only a minimum level of competence and employing schools are asked to determine whether or not adequate competence beyond the minimum is demonstrated.

The primary means of determining competence in vocational subject matter involves counting the number of years of experience as a worker in the occupational field which is to be taught. Thus a prospective teacher may be required to have six years of experience as an automobile mechanic before he would be allowed to teach vocational automobile mechanic classes. The number of years varies widely from one vocational subject matter field to another, and varies even more widely from state to state. One year of experience may be enough in one state, while twelve years is required in another.

It has been recognized privately, if not publicly, that a specified minimum number of years of occupational experience is not an adequate assurance that competence in the occupation has been attained. The experience may have been extremely limited in scope, many years out of date or even may have been non-existent, despite letters from relatives and friends attesting to it. This has led a few states to institute programs of testing occupational competence. Typically, both written and performance tests are used, and results are graded with the assistance of competent practitioners from the occupation. Oddly, it is customary to refuse permission to take the examination unless the applicant has several years of occupational experience. This is justified on the ground that recent vocational school graduates might make high scores on the tests, but have not learned certain unspecified skills, knowledges, and attitudes which are not measured by the tests. The fact that a person with occupational experience might also not have learned them is ignored.

Competence in pedagogy is almost universally certified on the basis of satisfactory completion of certain teacher education courses. Title and minimum length of each course are specified, and it is common to refuse to accept a course unless it has been taught by an instructor known to and approved by the state department of vocational education. This has been known to result in a person taking a course with the same title under three different instructors before it is counted.

When there is a shortage of vocational instructors, standards of competence in both subject matter and pedagogy tend to be decreased or postponed. It is typical in most states, for example, to allow vocational teachers in certain fields to begin teaching with absolutely no teacher education. The usual understanding is that one or so courses per year will be completed until minimum standards are reached. Often, however, no one checks to determine whether or not the individual has fulfilled his commitment unless the state staff learns that he is performing incompetently. The number of years of occupational experience is often specified as "X years of experience beyond the learner period". If the number of instructors is adequate, "the learner period" may be interpreted to be four to six years. If instructors are in short supply, "the learner period" may be zero, and in-school experience is counted as wage-earner experience. Part-time and military experience work may or may not be counted, depending on the supply of instructors.

Some states go even further and refuse to certify a vocational instructor unless he is offered a job by a school. This reverses the usual roles of the state and local school, but is justified on the ground that if there are few certified but unemployed vocational instructors available, standards of certification can be raised as rapidly as is permitted by increases in the supply of competent teachers.

In many states, community college instructors are not required to possess teaching certificates, and in no state are university professors required to be certified. It is common, however, for both community college and university personnel whose salaries are reimbursed from vocational funds to be required to be approved individually by the state department of vocational education.

Illinois has embarked on an interesting experiment in vocational teacher certification. The local education agency can employ almost anyone it considers to be qualified. Later the state will evaluate the quality of instruction and determine whether or not the instructional program should continue to receive vocational funds. It seems probable that the quality of instruction has increased in some schools as a result of this policy, but it seems equally probable that some schools have abused their new freedom. Certainly the number of people being forced to take vocational teacher education courses has declined, and the employment of new vocational teachers with baccalaureate degrees outside vocational education has increased.

The Clientele of Vocational Teacher Education

One way of moving toward better identification of responsibility for vocational teacher education is to identify the target groups to be served. Vocational teacher education clearly should be designed to serve each of the educational professions concerned with the effective delivery of vocational education services. This includes administrators, supervisors, coordinators, curriculum developers, evaluators, researchers, admissions personnel, counselors, instructors, laboratory assistants, and placement personnel. It is less generally recognized, but equally important, that vocational teacher education plays an important role in the development of teachers of career education, and that academic teachers and administrators need to be taught the rudiments of the rationale for vocational education.

It has been traditional in vocational education to prescribe different teacher education requirements for part-time and full-time personnel. Thus, while a full-time and a part-time instructor are each required to have the same degree of occupational competence, the former is always required to have more teacher education courses than the latter. In many states, part-time instructors are never required to receive such instruction.

Moss (1971, p. 134) suggests a far more useful distinction: between career and non-career vocational education personnel. The use by Moss of the term "career" should not be confused with the use of this same word in "career education." Moss uses the word to distinguish between those teachers who intend to continue as vocational education practitioners for the remainder of their working lives, and those who regard employment in vocational education as a temporary interlude. Non-career vocational education personnel ". . . might be used whenever the instructional role requires either recent specialized occupational competencies or when occupational models or interpreters are needed." Advanced level career instructors would be assigned to help non-career instructors with pedagogical problems. Career teachers, who expect to remain in vocational education, may be expected to be motivated to keep both their pedagogical and occupational skills current.

A major problem in vocational education is the use, in full-time instructional roles, of personnel who have never made a commitment to career teaching, and hence are unwilling to invest the time and effort required to keep up-to-date pedagogically. An even greater problem is the full-time teacher whose occupational speciality is no longer needed in the instructional program. If he is a career teacher, with broad preparation, he can be converted relatively readily to a role in curriculum construction, counseling, evaluation, placement, or some other non-instructional role. If he does not have such preparation, he could conceivably be given the necessary occupational experience to enable him to teach another vocational specialty. In actual practice, two things often occur: he continues to teach his old course until he retires, and because of this experience the school is reluctant to inaugurate any new program unless it is assured that the need for the program will continue for many years. Vocational teacher education has not developed adequate ways to cope with either of these types of clients.

Teacher education for paraprofessionals has not advanced rapidly, in part because state vocational certification rules seldom have been interpreted in ways which permit their use. One exception is the use of on-the-job trainers in part-time cooperative education programs. Though these people are used in every co-operative education program, and perform both as workers and teachers, they rarely receive teacher education of any type. A similar problem exists in health occupations education.

Teacher education for administrators suffers from lack of sufficient numbers of programs which adequately represent all phases of vocational education, as well as from inadequate ties with specialists in educational and business administration.

In spite of the basic premise of vocational education that a person who is prepared for an occupation will succeed better than one who is not so prepared, prospective teacher educators receive little or no preparation for teacher education. Instead, they are taught to be researchers or master teachers or administrators. While each of these is desirable in its own right, none is adequate preparation for teacher education.

There is a great deal of duplication of instruction in research, history, planning and evaluation, methods of curriculum development, and methods of working with advisory committees. Each subject matter field within vocational education tends to teach essentially the same content in each of these subjects to its own students. Although large parts of the education of coordinators of part-time cooperative education are still duplicated in classes segregated by field, more progress appears to be occurring in this than in other fields of instruction.

In most states, the education of vocational education counselors is accomplished through programs designed for general education counselors. This has many advantages, since the knowledge needed and the techniques used by all types of counselors are similar. However, in too many cases, almost the entire program is devoted to the solution of emotional problems and little attention is paid to coping with the world of work. An obvious solution would be to have training programs for various specialized types of counseling positions, with some of the program taken by all trainees, but with other parts being designed for specialization. A closely related training program should be used to prepare job placement personnel for vocational education programs.

Priorities

At present, the priorities for vocational teacher education are rarely determined rationally. One result is that in most states, the number of teacher educators in each of the vocational subject matter fields is more closely related to the needs for teachers two generations ago than to the needs of the present and the immediate future. A related symptom is that many states have not a single teacher educator who specializes in allied health occupations, although this has been an area of extreme teacher shortage for at least ten years.

Closely related to this problem is the fact that fewer than half of the states have conducted even the most rudimentary study of the supply and demand for vocational education professionals. Indeed, many states act as if they had no information even as to the supply of teachers, although they have for the past two years transmitted to the federal government data on enrolments and completions of preservice vocational teacher education programs. It would appear that they act as if they either lack confidence in their own data, or are unaware of its significance in the allocation of resources.

This suggests that high priority needs to be given to Federal encouragement of studies for the determination of needs for various types of vocational education professional personnel. A start in this direction has been made by the USOE requirement of the past two years that each state submit a vocational teacher education annual and five-year plan. At present, however, many of these plans appear to be works of fiction, in part because of inadequate data and in part because of a lack of expertise in vocational teacher education planning.

The first national attempt to inquire into state priorities for vocational teacher education was initiated by the Bureau of Education Professions Development of USOE. This Bureau required each state to submit a list of priorities in order to secure EPDA funds for 1971-72. Ferns and Voelkner (1972, p.8) reported the first priorities of states in descending order of preference:

"1. Updating teaching methods and competence of in-service personnel.
2. Teacher development for the disadvantaged.
3. Updating pre-service programs.
4. Career education.
5. Working with counselor personnel.
6. Development of coordinators.
7. Upgrading administrative personnel, and
8. Educational-industrial personnel exchange programs."

This list gives no indication of recognition that high priority needs to be given to the planning and implementation of adequate data collection procedures, and to the development of a small cadre of vocational teacher education planners.

Before vocational teacher education plans can be formulated fully in any state, and certainly before they can be fully implemented, it is necessary to have three groups in operation:

a. A policy formulating, administrative group charged with responsibility for determining the quantity and quality of vocational teachers needed in a state, and having authority to resolve conflicts of interest among vocational teacher education institutions. This group should report to the state director of vocational education, and should have close ties to the chief state school officer and to the state agency for higher education.

b. A liaison group made up of one representative of each institution in the state which purports to prepare or upgrade vocational education professional personnel. The liaison group should meet at least quarterly, and probably monthly, with the state staff to plan and to report on improvements in vocational teacher education. All official contacts between the state vocational education department staff and the teacher education institution should go through this one institutional representative.

c. An advisory group made up of laymen and vocational teachers, administrators, and other professional personnel. The advisory group should meet with the liaison group and the state staff at least semi-annually to provide advice with regard to the efficiency of vocational teacher education programs in the state.

Most state-wide planning for vocational education professional development will be concerned with implementing pre-service education and with providing incentives for the implementation of in-service education. Implementation of in-service education is likely to continue to be the responsibility of local education agencies. One incentive for accomplishing this task should be a state-wide requirement that each local educational agency submit one-year and five-year professional development plans, together with data on how past plans have been implemented. Another requirement might well be the provision of incentives (eg. increased pay) to individual teachers who prepare and who carry out individual one and five-year plans of personal development.

Another area of high priority is the production of curriculum materials for the education of academic administrators and teachers who will be involved in career education. While they will not be involved directly in the vocational education phase of career education, they need to understand the relationship of all of career education's components. A similar need exists for the education of vocational educators about their relationships to the non-vocational components of career education.

Each institution of higher education which purports to prepare teacher educators should include in its program education regarding the goals, methodology and evaluation of teacher education programs.

Administrative Structure

The Smith-Hughes Vocational Education Act of 1917 established federal aid to states for vocational education. It was also the first substantial piece of legislation which recognized the need for education personnel development. Each state was required to spend a portion of its federal aid on the "training of teachers, supervisors, or directors of agricultural subjects, or of teachers of trade, industrial or home economics subjects". The training of supervisors or directors of trade, industrial or home economics subjects was not authorized. This disparate treatment of the various parts of vocational education was characteristic both of the legislation and of the administrative structure of vocational education for the next fifty years. One result has been that a high proportion of vocational leadership has come from these favored fields.

Periodically, additional subject fields were added to the federal vocational education legislation until it now covers every non-professional occupation which requires less than a baccalaureate degree for the beginning worker. Until the passage of the Vocational Education Act of 1963, however, money which was appropriated for one field of vocational education (eg. agricultural education) could not be used for the education of teachers in another field (eg. trade and industrial education). It is still true today that any vocational education funds which are used for vocational teacher education are necessarily subtracted from the funds available for administration and for program operation.

University-based Programs

Despite these handicaps, substantial programs of vocational teacher education began to evolve. A typical pattern was for the state board of vocational education to approach each publicly supported university in its state to enquire as to its interest in offering vocational teacher education programs. Almost universally the answer was "yes", provided that no degree was to be conferred and that the state board of vocational education would pay the entire cost. Baccalaureate degrees in each of the parts of vocational education did not come to be commonly offered until the mid-1940's and many universities today have never incorporated vocational teacher education programs into their regular budgets, but still depend on an annual subsidy from federal funds through the State Board.

A few states administered vocational teacher education through their state office, but the lure of college credits (if not regular degrees) dictated that most vocational teacher education be offered under university auspices. The most common structure on the university campus was for each facet of vocational teacher education to go to the college or department which was willing to offer appropriate courses. Thus teacher education for vocational agriculture teachers tended to go to colleges of agriculture; vocational home economics to the school of home economics; distributive education and business education to the college of commerce and business administration, etc. Trade and industrial education, however, had no close counterpart on the university campus, so it tended to be put with engineering, education, or applied science.

This organizational structure would not have been too undesirable if it had not been complicated by earlier political decisions in higher education. Quite often, the best or only school of agriculture was in one town, the school of commerce in another town, while almost every little college in the state purported to offer a program in home economics. The result was that vocational teacher education was fragmented geographically to such an extent that most states have not been able to pull it together, and will be unlikely to do so without federal incentives. Even where all parts of vocational teacher education exist on the same campus, inter-college rivalries within the university are such that a coordinated, coherent program of vocational teacher education is difficult to arrange. If, for example, a program for preparing vocational education administrators is proposed, it is too often true that each department which trains vocational education teachers feels that it must offer at least two courses to each student, and is unwilling to trust another department to provide an advisor to the student.

Progress is beginning to be made, however. At least twelve departments of vocational teacher education have been established, and coordinating mechanisms have been created in most other universities to plan programs which cut across departmental lines.

State Departments of Vocational Education

The basic responsibility for vocational teacher competency lies with the state department of vocational education. Since 1917 it has been responsible for preparing periodically a state plan which indicated how it would spend federal vocational education funds. A required feature of this state plan was a section which specified the qualifications of teachers, administrators and teacher educators.

This latter feature allowed the state department to pass on the qualifications of university personnel. Although universities were sensitive about having professors screened (and in some cases hired) by state office people, this was probably a good idea in the early days, when vocational education teacher education was so foreign to standard university concepts.

What was inconsistent, however, was that the criteria for teacher educators were so dissimilar in agriculture, home economics, trade and industrial education and other vocational education fields. The standards for teachers, supervisors, and teacher educators within any one field appeared to be much more similar than did the standards for any one of these three types of personnel across fields. For example, the qualifications of teachers, supervisors, and teacher educators of agriculture were very similar, while the qualifications of teachers were very different in agriculture from those in trades and industries. This in turn arose from the essentially autonomous administrative structures for agricultural education, distributive education, etc. within each state department of vocational education and their close relationships with similar groups in USOE. Very different philosophies of and goals for vocational teacher education grew up within each of these enclaves. No one was responsible for training administrators and teacher educators who could work well with all facets of the program.

Since 1968, however, this has begun to change. Under the Education Professions Development Act, states were required to submit plans for vocational teacher education. In the beginning, these were largely works of fiction, for states had no effective concept of either supply or demand which extended beyond a belated response to the anguished cries of local administrators who could not hire competent teachers at the last minute. Virtually no long-range planning was done beyond the compilation of lists of vocational teachers who were teaching despite not having completed a series of "required" pre-service teacher education courses. The result of this type of "planning" was a call to an appropriate teacher education department to establish a course at a convenient geographic center, and a letter to each teacher on the list, threatening loss of teacher certification if the course were not completed.

Increasingly, states are establishing a unit on vocational teacher education within the state department, with responsibility for all of vocational teacher education. A typical early activity of such a unit is the formation of a state-wide liaison committee made up of one or more vocational teacher educators from each university offering one or more such programs. Such liaison committees often begin by providing their membership an opportunity to become acquainted for the first time, and then progress toward such activities as compiling a list of the numbers of graduates from each institution. A few liaison committees are actively involved in determining what types of teachers are needed, and in modifying the size and content of programs to meet these needs.

The principal operational problem of such units seems to be that when a crisis arises (and they arise frequently) in some other part of the state vocational education department, the EPD personnel are assigned tasks and even continuing responsibilities which have little or nothing to do with EPD.

U. S. Office of Education

Until the mid-1960's, the administrative structure of USOE was almost identical to that described in the preceding few paragraphs. This is understandable, since most state patterned their organization after that used at the federal level.

One of the methods for bringing about uniformity within each field (but not across fields) of vocational education was the annual regional conference of vocational educators within each field of specialization. These conferences were, until the early 1950's, firmly under the control of a subject-matter specialist from Washington, who enunciated the current national policies on teacher education in his field. Any coordination which existed across fields of specialization occurred only on major policy issues which attracted the attention of the federal director of vocational education.

During the 1950's the programming of the regional vocational education conference was gradually shifted to allow more control by participants. This began to develop some differences in approach across regional lines, but before this could have substantial effects, the regional conferences were abandoned. Since the mid-1960's there has been no regional organization for vocational education, although the USOE maintains regional offices in each of ten cities across the nation.

A major change in federal organization occurred during the late 1960's following the passage of the Education Professions Development

Act. A decision was made to establish a Bureau of Education Professions Development (BEPD) to administer this Act, and within the Bureau a Branch for Vocational Teacher Education was created. For the first time this appeared to unify the administration of all fields of vocational teacher education at the national level.

At about the same time, the predecessor to the current Bureau of Adult, Vocational and Technical Education (BAVTE) was created. This Bureau had two major groups which were concerned with vocational teachers. The Division of Vocational Education was the lineal descendant of the group which had administered teacher education in agriculture, home economics, and trades and industries since 1917. It opposed the creation of the Branch for Vocational Teacher Education within BEPD on the ground that only one group should administer funds for vocational teaching and for vocational teacher education. It lost that battle, but still has hopes of winning the next one. Since USOE has had a long history of reshuffling its branches at frequent intervals, it is not unreasonable to expect that these shifts in structure will continue. The latter Bureau (BAVTE) has maintained a small unit responsible for keeping abreast of vocational teacher education, perhaps in part to be prepared for the possibility that the responsibility for vocational teacher education will be returned from BEPD teacher education to vocational education. This unit could be expanded rapidly if administrative responsibility were given to it.

But this is not the end of administrative complications within

USOE. A second Division within BAVTE is responsible for instiutional manpower training under the Manpower Development and Training Act (MDTA). Funds for this act are appropriated to the U.S. Department of Labor, but a portion is transferred to USOE for operation of manpower training programs which are organized on an instutional basis (those which are conducted in school-like settings as opposed to those conducted on the job) and for training and technical assistance projects. Initially, these funds were provided to the states for purchase of EPD services from existing teacher education institutions, but little service could be found which was suitable for professionals working with a disadvantaged clientele. Consequently a decision was made to establish a new network of EPD facilities. Some three private, non-profit organizations were established for this purpose, and were supported directly from USOE. Over a period of several years these have been phased out or have been absorbed in part by existing institutions. As of September, 1972, there were eight AMIDS, two at universities, two at post-secondary technical institutes (one public and one private), two in state departments of education, and two in private-non-profit organizations which were created for non-MDTA purposes. Each state receives funds from USOE for purchase of AMIDS services, and the states which have AMIDS facilities within their borders receive additional funds for contracts for basic AMIDS operation. Contracts are renegotiated annually, based on past performance, need for future services, and availability of funds. Contracts can be and have been terminated and awarded to other groups.

It is believed that the most common sources of AMIDS staff members are industrial training departments and public and private schools. Hard data on backgrounds were not available. Minority group members are far more frequently represented in AMIDS than in universities. None has tenure, but when one considers that at the end of the contract year they often have not known from one month to the next that funds would be available for their salaries, turnover has not been too great. All initial appointments must be approved in advance and performance is evaluated frequently by the USOE staff.

The reasons given for beginning to develop a separate AMIDS structure, rather than using existing teacher education programs, include the following. Most universities were:

a. unqualified, especially in teaching how to work with disadvantaged individuals.
b. busy providing pre-service programs for vocational education.
c. interested primarily in instruction on a campus, rather than in providing instruction on the site where the teachers work.
d. not interested in using the latest methods of industrial and military training.
e. more interested in semester-long courses for credit than in short, intensive instruction designed to meet a specific need.
f. too interested in academic credentials when recruiting new staff.

An unstated, but probably influential factor, was the antipathy of certain Department of Labor officials to vocational education programs in comprehensive schools and a desire to avoid contaminating

MDT staff through exposure to instructors who believe comprehensive schools are desirable.

Each of the stated reasons appears to have considerable validity, but apparently the Federal AMIDS group now feels that they can best be overcome by contracting with existing institutions rather than creating new institutions. The reason for this very recent change in emphasis could not be determined. One reason may be that at least one of the old AMIDS centers appeared to be more interested in establishing a private consulting firm to serve industry than in performing its original mission.

The AMIDS appears to have made considerable progress in solving all of the problems stated above, though the first one is far from a complete solution. They have also succeeded in creating a new problem while not solving an old one:

a. they have not striven to build continuing careers for the teachers they have trained.

b. the teachers they train seem to have many of the same criticisms of AMIDS teacher educators that in-school vocational educators have of the performance of university teacher educators. (The BAVTE AMIDS staff disagrees with this conclusion because the feedback they received from institutions they serve is positive. Both points of view might be correct. Institutions seek the best service they can obtain. If in-service programs from universities are ineffectual, a slightly better competitor should receive positive feedback.)

AMIDS reported that it trained 70,000 people in Fiscal Year 1972. The unduplicated count of AMIDS trainees is not known, but duplications are believed to amount to no more than five percent. The average length of training is not known, nor is the cost to the federal government per trainee. One AMIDS center estimates that its budget permits an expenditure of about eight times as much per MDT staff member as per vocational education teacher. This higher level of funding, the obvious willingness to stop funding those EPD programs which do not produce results, and the almost complete freedom from hide-bound university staffing practices are succeeding in building a model which, while not perfect, deserves emulation

Obviously AMIDS and university vocational teacher educators have a great deal to learn from each other. Unfortunately, the latter hardly knows that the former exists, and the former seemed determined until recently to disassociate itself from the latter. An example of a highly desirable form of cooperation was the recent program of 32 workshops, serving 1091 participants, for vocational teachers of handicapped and disadvantaged students throughout the nation. Funds were provided through DVTE, and AMIDS ran the workshops. A similar program for vocational teacher educators would be highly desirable.

Education Professions Development for Health Occupations Programs

As noted in Chapter III, it was not until the 1950's that vocational education paid significant attention to preparation for the health occupations. Most of these occupations had been considered "professional," and hence were excluded from consideration by the various Federal vocational acts. The few that clearly were not professional were simply ignored by most vocational educators. For a variety of reasons vocational educators began to develop programs for certain occupations in the nursing field after W. W. II. The little training which was provided for teachers of these occupations was conducted by trades and industry teacher educators because this was the section of vocational education which traditionally had been responsible for new programs which did not fit well elsewhere.

Gradually the state and federal vocational education establishment began to acquire staff who were concerned first with nursing and secondly with "other allied health occupations" which required less than a baccalaureate degree for entrance.*

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* The difficulties involved in wording this sentence accurately are indicative of some of the legislative and identity problems faced in this area. The occupational education programs in BAVTE are limited by law to those occupations which are non-professional and which require less than a baccalaureate for entry-level employment. Thus they cannot prepare physicians or dentists or the teachers of physicians or dentists. All nurses, even though most are trained in less-than-baccalaureate programs, would appear to be excluded on

the ground that they are professionsls. But no, the Commissioner has ruled that they are eligible. Nurses, as do other powerful medical groups, prefer to have their own special legislation and resist being included among "allied health occupations". At the same time, certain of the "allied health occupations", eg. medical technologists, require a baccalaureate degree, and hence cannot be touched by BAVTE. Both the Public Health Service (PHS) and BAVTE deny that they have a gentleman's (or lady's) agreement that PHS will not engage in pre-service teacher education though both agree that BAVTE has no money for such programs.

Before they had progressed much beyond the stage of supporting state and national conferences on teacher education in health occupations, a new development occurred: Congress began to pass legislation dealing with all types of health manpower and assigned responsibilities for different programs to almost every Cabinet Department and to several independent commissions and agencies. These acts led to the establishment of a new federal, regional, and state bureaucracy concerned with health manpower in relationship to the traditional health professions, which in turn led to the placing of certain responsibilities for education professions development for health in the Public Health Service (and a few other agencies) instead of USOE. To date none of these agencies has established a special branch for this function. Nevertheless, PHS has been quite active in improving the quality of instruction in the more traditional health professions through a number of units and programs. And the PHS Division of Allied Health Manpower has indicated its willingness to consider certain "special projects grants" for health occupations education professions development. Apparently this is the source of a recently announced $100,000 contract to the Arizona Hospital and Research Foundation to develop instructional programs to improve teaching effectiveness of allied health educators. This is the only significant EPD for vocational health occupations programs which we have been able to find thus far in PHS, but the search is continuing. It is probable that a number of grants and contracts have health occupations EPD as part of their activities, but there is no single source for this information.

Indirectly, the Federal government has been responsible for a small amount of vocational teacher education through the Regional Medical Programs which it supports. These 55 RMP's are each responsible for improving the delivery of health services in a specific geographic area. Several of them have seen the need for vocational education professions development and have supported significant programs to meet this need. Unfortunately, there is no effective means of coordinating these efforts or of exchanging information effectively across RMP geographic boundaries. Indeed, PHS disavows EPD activities by RMP's.

BAVTE staff members feel strongly that PHS should not conduct pre-service or in-service education programs for health occupations teachers. They would gladly accept PHS funds for traineeships for

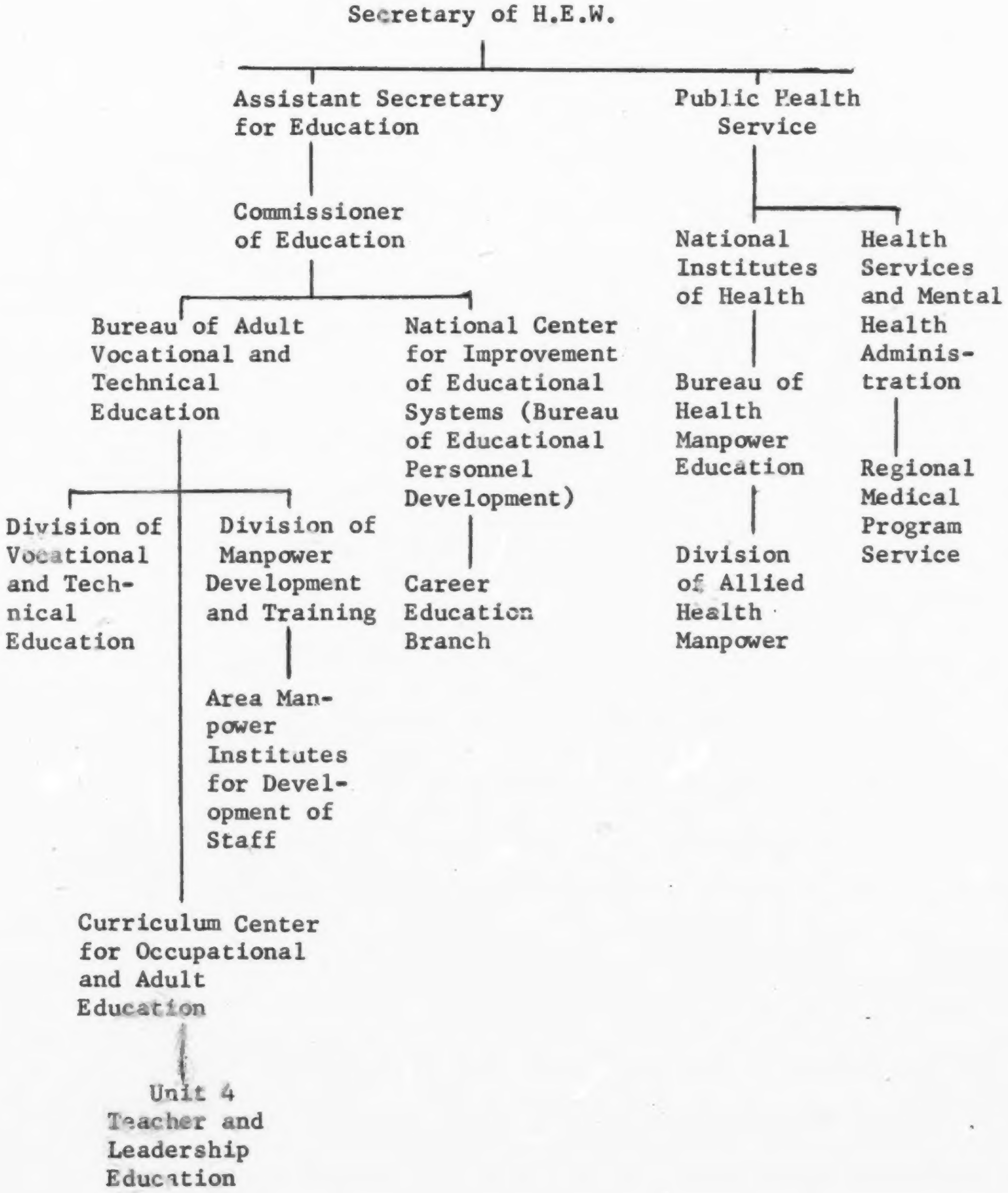
BAVTE-sponsored education professions development, but PHS does not appear eager to do this. Unless BAVTE acquires discretionary funds from some source, it appears likely that both pre-service and in-service education in this field are likely to continue to be completely inadequate, both quantitatively and qualitatively. In the entire country there are only sixteen institutions which claim to have vocational health occupations teacher educatio programs. Of these, only six have any degree of comprehensiveness, and four of the six began operation in 1972. The total pre-service output in Fiscal Year 1971 was 272 teachers, and the output is not much higher now. The four new programs are funded on a temporary basis, principally from BEPD grants to the states involved. As nearly as can be determined, the recurring funds for health occupations EPD from the Vocational Education Amendments of 1968 (which go from BAVTE to the states) tend to be used to pay for teacher education for the occasional nurse who is allowed to enroll in a trades and industries course which is not designed to meet her needs. None of this money is controlled directly by BAVTE, since it is part of an allocation by formula to each state. The little money spent nationally for EPD in health occupations is devoted almost entirely to in-service (3,467 enrolled), rather than pre-service teacher education (478 enrolled).

Figure IV-1 indicates something of the relationships among four of the parts of the Department of HEW which have responsibilities for education personnel development. Undoubtedly the greatest unmet need for personnel development for teachers is in the nursing and allied

Figure IV-1

Department of Health, Education, and Welfare

Administrative Structure for Vocational
Education Professions Development


Secretary of H.E.W.
Assistant Secretary for Education
Public Health Service
Commissioner of Education
National Institutes of Health
Health Services and Mental Health Administration
Bureau of Adult Vocational and Technical Education
National Center for Improvement of Educational Systems (Bureau of Educational Personnel Development)
Bureau of Health Manpower Education
Regional Medical Program Service
Division of Vocational and Technical Education
Division of Manpower Development and Training
Career Education Branch
Division of Allied Health Manpower
Area Manpower Institutes for Development of Staff
Curriculum Center for Occupational and Adult Education
Unit 4 Teacher and Leadership Education

health area. The majority of what is being done to meet this need is being accomplished by a few universities and professional associations who receive funds from the sources mentioned above, plus the Kellogg Foundation, which is one of the few sources of leadership for EPD in this field. It hardly seems reasonable, however, that the Federal government's activities in this important area are so lacking in coordination. The absence of a coordinated effort is undoubtedly an important factor which keeps the needs in this field at such a critical level. One of the most frustrating problems encountered in preparing this report was the almost complete lack of awareness that EPD needs in this field were in any way different from the needs for preparing practitioners. Consequently Federal health agencies had no records of EPD programs, and were unaware of their omission when programs had not been initiated.

Department of Defense and Other Governmental Agencies

Almost every cabinet Department and many independent governmental agencies maintain facilities for training persons for occupations which require less than the baccalaureate degree for entrance. Many of these departments and agencies have rudimentary programs for training the staff to conduct these vocational education programs. By far the largest and best developed, however, are the vocational teacher education programs of the Departmentment of Defense. Each branch of the armed forces operates numerous vocational schools designed to prepare enlisted men and officers for specialized duties. Almost without exception these schools operate short-term intensive vocational teacher education programs for their own teachers. These programs concentrate almost exclusively on pedagogy (methods of organizaing material, methods of teaching, evaluation of teaching, etc.). Technical competence is acquired on the job, or through attendance in the same technical course which later will be taught. Course content is carefully structured by curriculum specialists; the process of instruction is monitored frequently by supervisors; evaluation is conducted by specialists; and research on the entire process is supervised by thoroughly qualified research specialists. As compared with public or private vocational school teaching, instruction in the armed forces is much more carefully controlled, and the expertise of the instructor is supplemented extensively by specialists. Vocational educators inside and outside the armed forces are generally unaware of what is going on outside their zone of immediate concern.

Local School Organization

Local education agencies typically have no administrative structure designed to facilitate vocational teacher education. An obvious reason for this is related to economy of scale - most local education agencies are not large enough to be able to afford a specialized vocational teacher education staff. This must not be the sole reason, however. In the nineteen twenties and thirties several large city school systems employed vocational teacher educators. In some cities these staff members were responsibile to the local director of vocational education. In others they were assigned to a locally controlled teacher education college which also prepared teachers in academic fields. Invariably these teacher educators covered only a portion of vocational education, eg. distributive education or home economics education.

The local vocational teacher educator appears to have been a casualty of inadequate local school finances. Given a choice between spending a limited budget on teaching or on teacher education, school systems almost invariably chose the former. Almost all local teacher education colleges became state financed and controlled, and teacher educators who had been responsible to the local director of vocational education were shifted to a nearby college budget. The net effect is that local public schools have virtually no control over the teacher education which they need to enable them to operate more efficiently. The small amount of in-service education that goes on is directed on a part-time basis by administrators who are overburdened with other more pressing duties and have not been prepared for this task. Barlow (1972a) has excellent suggestions for in-service programs.

Professional Associations

The only organizations which have vocational teacher education as a principal task, and which are available universally to vocational teachers, are the professional associations in the field. These are of three types: specialized teacher education, specialized subject matter, and general.

The specialized teacher education types at the national level bear such titles as the National Association of Industrial and

Technical Teacher Educators and the National Association of Office Education Teacher Educators. As their name implies, their membership usually is made up of teacher educators rather than teachers.

The specialized subject matter types have names such as the American Home Economics Association and the American Nurses' Association. At the state level, similar organizations exist. Both state and national organizations of this type usually include both teachers and teacher educators from one field of vocational education, together with members from outside vocational education.

General organizations are limited to the American Vocational Association and its state affiliates. Most teacher educators belong to state and national organizations of each of these types. Most of these organizations limit their teacher education activities to a professional journal, an annual convention and to specialized conference convened on an ad hoc basis to consider pressing problems.

The American Vocational Association, as the largest and oldest of these professional associations is particularly worthy of study. Its organization is built around largely autonomous divisions bearing the traditional titles of agriculture, home economics, trade and industrial education, etc. As each division enrols 1000 members it is entitled to a vice-president and a seat on the powerful executive committee. Each division operates its own portion of the convention program and is allotted space in the professional journal. Each member is allowed to belong to one and only one division, even though his responsibilities may cover two, three, or all areas of vocational education. With this type of structure and control, professional consideration of such general concerns as philosophy, goals, research, evaluation, and administration is difficult to achieve. Recently, an effort has been made to create departments (eg. teacher education) which cut across divisional lines to give attention to common interests and this, alone, is helping substantially to integrate the goals and planning of vocational teacher education programs. Teacher education is rarely addressed directly in the professional journal of AVA, but numerous descriptions of innovative programs are presented, presumably to encourage teachers and administrators to reconsider and possibly to change what they are now doing.

Administrators have been for many years organized into associations of state directors and of local directors of vocational education. Their activities seldom are concerned with teacher education or with the training of administrators.

National Center for Leadership Development

The National Center for Vocational Education Research at The Ohio State University has assumed a considerable amount of responsibility for leadership development in vocational education. At one time "and Leadership Development" was added to its title, but this has been dropped. Nevertheless their work in this field has continued.

The activity of longest standing has been the series of six annual National Teacher Education Seminars. These seminars attract some 500 vocational educators from all parts of the country. The

National Center provides the program, but does not pay expenses of the registrants.

Equally important is the work of the Center in identifying teacher competencies. Competency-based modules for teacher education are being developed by the Center in cooperation with Missouri and Oregon State Universities.

Types of Programs

Pre-service Professional Development

Any type of teacher, in order to be effective, must acquire a certain degree of competence both in the subject matter to be taught and in the pedagogical techniques of determining student needs and organizing, presenting, and evaluating instruction. In the teaching of academic subjects, the former is emphasized at the collegiate level. The latter is emphasized more and more in the instruction of younger and younger groups of students. Presumably this is true because older, more advanced students can learn in spite of poor pedagogical techniques, while the advanced levels of instruction require higher levels of subject matter sophistication if the student is to keep learning. A third component which is demanded universally in the preparation of professional personnel for academic instruction is general education. It often pre-empts from one-third to one-half of the pre-service program.

Some authorities have maintained that vocational instructors must master two occupations: that of worker and that of teacher. In reality, however, state vocational certification rules appear to have emphasized the former (experience as a worker), while employment practices by local education agencies have emphasized completion of baccalaureate degree teacher education programs. The latter places significant stress on general education.

The effectiveness of state or of local determination of the desirable qualifications of vocational teachers depends to a considerable extent of the relationship of the supply and demand for each of the specialized groups of vocational teachers. Clearly there is a close relationship between the supply of vocational teachers and the proportion of employed teachers who hold baccalaureate degrees. (See Table IV-1). The percentage of vocational teachers holding the baccalaureate ranges from 94 plus for agriculture, home economics, office occupations and distributive education teachers to less than 40% for trades and industries teachers. Health occupations and technical education teachers are intermediate, with the percentage of baccalaureates falling between 50 and 60.

It is probable, however, that variations of supply of teachers are due to a third factor: wide discrepancies in numbers of graduates of pre-service programs. A comparison of Tables IV-1 and

Table IV-1

Vocational Education Teachers Who Hold Academic Degrees
All Levels of Instruction Combined
Spring, 1969

Vocational Field	Baccalaureate or higher degree	Other Degree *	No Degree
Agriculture	95.2%	2.5%	2.3%
Home Economics	94.8	3.5	1.7
Office Occupations	94.7	3.5	1.8
Distributive Education	94.2	3.2	2.6
Technical Education	58.9	11.2	29.9
Health Occupations	52.5	38.0	3.5
Trades and Industry	39.8	21.8	38.4
Total	74.2	12.9	12.9

Ferns and Voelkner, 1972, p.41

* Probably includes associate degrees, certificates and diplomas from community colleges, hospitals, and industry-based programs.

Table IV-2

Vocational Education Professionals: Employed, Receiving Baccalaureates, and Completing State Plan Pre-Service Requirements

	Number Employed In 1971 (1)	Received Baccalaureates In 1970(2)		Completed State Plan Pre-service Requirements In 1971 (1)	
		Number	%	Number	%
Agriculture	12,910	1,460	12	1,644	13
Home Economics	38,105	6,134	18	7,519	18
Office Occupations-Business Education	49,363	8,590	19	3,262	7
Distributive Education	11,974	432	4	1,048	9
Technical Education	14,750	N.A.	--	321	2
Health Occupations	12,613	N.A. -----	--	272	2
Trades and Industry	59,065	1,383	2	2,247	4
Others	6,540	-----	--	536	8
Total	211,550	17,999	9	17,708	9.2

(1) USOE Summary Data, Vocational Education, 1971, p.3 and 4.

(2) Ferns, 1972, p.45

N. A. = Not Available

IV-2 shows clearly that those vocational programs which employ high proportions of teachers with baccalaureates tend also to be the vocational programs which have a high output of pre-service teacher education programs in relationship to the number of vocational teachers employed. Baccalaureate pre-service teacher education programs in agriculture, home economics, and business education-office occupations are preparing annually in excess of ten percent of the total numbers of vocational teachers employed in these specialties. Business and home economics, however, are special cases since a high proportion of graduates of these programs enter non-vocational teaching. Teacher education programs in distributive education are relatively small, but teachers in this field apparently are able to substitute non-teacher education baccalaureates. More than 90% of the teachers in this field hold at least a four-year degree, and more than nine percent of these teachers completed state plan pre-service programs in 1970.

In every field of vocational education except one, more teachers are completing state-plan pre-service requirements than are completing baccalaureates. At first glance this might seem to indicate that all persons receiving baccalaureates in vocational teacher education actually enter teaching, but when Table IV-3 is considered, this is obviously not the case. What is happening is that in every field of vocational education teachers are recruited from sources other than baccalaureate teacher education.

It should be noted that within the broad categories shown in these two tables there are hidden considerable shortages of pre-service output in certain specialties. For example, only 527 teachers of gainful home economics completed pre-service requirements during 1970. Another distortion lies in the fact that the baccalaureate output of home economics and business education teachers must supply sizeable programs of non-vocational instruction, especially in grades 7 - 10.

A major factor often overlooked in statistics on output of pre-service programs is that a substantial proportion of teacher education graduates do not enter teaching immediately, and a smaller but significant group never enter teaching. Table IV-3 shows clearly that the proportion entering teaching is particularly low for females in agriculture, trades and industry, and industrial arts. That this is not exclusively a female phenomenon is shown by the lower proportion of male than female home economics graduates who enter teaching. Rather, this failure to enter teaching seems to be related to completion of teacher education in a field in which your sex is a distinct minority.

These minority members not only are less likely to enter teaching, but they are also far more likely to drop out of sight. For female minority group graduates, the proportion about whom nothing is known is invariably above 50. Research is needed to determine whether or not these results are due to sex segregation excluding these minority persons from employment in teaching, or due to personality characteristics

Table IV-3

Occupation on November 1, 1969 of Persons Who Were Graduated Between September 1, 1968 and August 31, 1969 With Qualifications For Standard Secondary School Certificates

Field	Sex	Percent Teaching	Percent Seeking Teaching Jobs	Percent In Non-Teaching Jobs	No Information	N
Agriculture	M	55.5	.5	24.3	19.7	1,275
	F	21.7	13.9	7.9	56.5	115
	Total	52.7	1.7	22.9	22.7	1,390
Business Education	M	60.2	1.7	21.6	16.5	2,281
	F	58.0	2.6	20.2	19.2	5,655
	Total	58.6	2.4	20.6	18.4	7,936
Distributive Education	M	71.9	.3	16.2	11.6	345
	F	59.8	.0	14.7	25.5	102
	Total	69.1	.2	15.9	14.8	447
Home Economics	M	40.9	.0	31.8	27.3	22
	F	59.2	3.4	21.1	16.3	6,217
	Total	59.2	3.3	21.1	16.4	6,239
Trades and Industry	M	44.2	.4	17.5	37.9	530
	F	22.5	1.1	20.2	56.2	89
	Total	41.0	.5	18.0	40.5	619
Industrial Arts	M	71.4	.9	15.7	12.0	3,808
	F	13.8	3.8	8.6	73.8	80
	Total	70.2	.9	15.6	13.3	3,888
Secondary Education, all fields	M	64.0	2.2	17.2	16.6	52,090
	F	61.1	3.5	16.9	18.5	67,933
	Total	62.3	2.9	17.1	17.7	120,023

Source: Ferns, 1972, p.38.

which encouraged them to enroll in a program in which they knew they would be a minority.

The proportion of trained vocational teachers who are seeking, but have not found a teaching job is very small, except for female agriculture teachers. While differences between fields are probably somewhat indicative of relative imbalance between supply and demand, the differences are so small as to be of questionable importance. Only in home economics was the percentage of those seeking teaching jobs above the average for all secondary teachers. When we consider that a 2% unemployment rate is considered to be near the minimum which can exist in our economy regardless of the number of jobs available, these rates below one percent are phenomenally low. Indeed, they are so low as to indicate that considerable damage is likely being done to the program of vocational education because of a shortage of pre-service education program graduates in most, if not all, fields of vocational instruction.

The figures on the percentage of graduates who have taken non-teaching jobs are difficult to interpret. If a graduate has an opportunity to choose between a teaching and a non-teaching job, presumably he or she will choose the one which appears most attractive to that individual. Thus relative working conditions, as well as availability of jobs, affect decisions not to enter teaching. If a high proportion of people in a field choose jobs outside teaching, then pay and other working conditions in teaching may be relatively unsatisfactory. It is clear, however, that opportunities for employment in non-teaching positions vary with the state of the economy, and are seldom, if ever, equal from one field of vocational specialization to another. For example, non-teaching jobs for teachers who are nurses are usually more frequent than non-teaching employment for home economists.

In-Service Professional Development

The best available quantitative data on the amount of in-service education for vocational educators are presented in Table IV-4. There is one glaring error, which shows twice as many "other" teachers enrolled in in-service programs, as the total shown as being employed. Moreover, we do not know how much trust to place in the remaining figures because it is rumored that in a few states the in-service figures are pure estimates. If the figures are reasonably accurate, and representative of other years, it appears that from a sixth to a half of vocational educators are enrolled in in-service programs at some time during each year, and that between two and twenty percent complete the state's minimum in-service teacher training requirements each year. Low rates of completion are shown in new programs, which is to be expected, since staff members probably have been on the job only a short time. Unfortunately, no data are available on the quality of the in-service training or its duration. Quality almost certainly is highly variable, ranging from a lecture in an "institute" arranged

Table IV-4

In-service Vocational Education Teacher Training Programs

Fiscal Year 1971

Vocational Program	Total Teachers	Enrollees	% of Total Teachers	Completions	% of Total Teachers
Total (Unduplicated)	211,550	80,746	38	31,469	15
Occupational Programs:					
Agriculture	12,910	7,284	56	2,126	16
Distribution	11,974	4,210	35	1,881	16
Health	12,613	3,467	27	2,005	16
Homemaking	32,735	12,825	39	5,753	18
Home Economics (Gainful)	5,370	1,360	25	1,024	19
Office	49,363	10,511	21	3,457	7
Technical	14,750	3,219	21	2,021	14
Trades and Industry	59,065	20,792	35	10,410	18
Other	6,540	12,960	198 !	151	2
Special Programs:					
Exemplary	1,890	315	17	223	12
Prevocational	7,929	1,123	14	718	9
Prepostsecondary	295	25	8	7	2
Remedial	959	327	17	299	15
Cooperative, Part G	2,803	827	30	310	11
Disadvantaged	11,933	3,315	28	1,355	11
Handicapped	3,609	1,014	28	499	14

USOE Summary Data, Vocational Education, pp.3 and 4.

by a county superintendent of schools to a carefully planned sequence of experience designed by teachers, administrators and members of the community. Duration may range from an hour to several months of full-time involvement. Each case counts equally in the available statistics.

Another matter which does not show adequately in the statistics is the apparently increasing tendency of teacher organizations to insist that teachers be paid for the time they spend in in-service training. One refreshing exception is the accomplishment of several organizations of teachers of allied health professions which have organized a series of three or four-day in-service professional education workshops for which the participants pay a twenty to seventy-five dollar enrollment fee. Some pay the fees personally, but in other cases their employers pay part of the costs involved. This fee makes the workshops nearly self-sustaining. Apparently the models here are the continuing education workshops on technical subjects organized and paid for by self-employed physicians.

The most common type of pay for in-service training of vocational education professionals is in college credits which are negotiable in terms of continuing increases in salary. Unfortunately, the courses for which credit is awarded often are designed not to meet the needs of an individual teacher or school district or community, but rather to have some sort of universal applicability. Indeed, many universities have a firm policy that course work which is designed to meet the needs of one community cannot receive college credit. This is justified on the ground that before a course is approved for college credit a course outline must be filed and approved. Any course which is designed specifically to meet the needs of an individual case is not likely to conform to a previously approved outline, and therefore no credit can be granted. This is nonsense, of course, since good professors never follow the outline anyway, but it is used to justify university failures to meet individual and local needs.

In order to avoid this problem, many local education agencies have undertaken the job of determining which types of in-service experiences should be deemed the equivalent of a given amount of college credit, and thus deserving of additional salary. Attendance at a non-credit school offered by an equipment manufacturer poses no particular problem of conversion to the equivalent of college credit, but occupational experience for which a teacher is paid as a worker is sometimes ruled out on the ground that the participant should not be paid twice for the same experience.

This type of reasoning misses the point. The goal of in-service educational development is improved performance in an educational job, and performance on the job ought to be the criterion for pay. Since we know little about how to do this, the next best solution is pay for satisfactory completion of a carefully designed plan for individual professional development. One-year and five-year planning for vocational education institutions is now well accepted. One and five-year plans for individual professional development are just as logical. Such plans should be developed by the individual and his or her supervisor and approved by a group of peers. Evaluation of the quality of execution of the plans should be judged by the same group, with administrator, student, and community review of crieria and performance.

Rather than using future pay increases as a means of rewarding satisfactory in-service development, a few schools have experimented with year-round pay for nine months of teaching plus two months of planned in-service development. The longevity of such programs has generally not been great, however. The first budget squeeze often results in elimination of twelve month pay on the ground that teachers are being paid for two or three months of doing nothing. No one seems to see any objections, however, to paying one hundred dollars annually for the rest of the teacher's working life in return for completion of an in-service education program completed at age twenty-five or thirty.

Chapter V

Utilization of Resources

Planning

Effective utilization of resources requires planning, and planning requires determination of needs and available resources, and the setting of priorities. Planning in vocational education personnel development cannot proceed independent of planning for vocational education as a whole. We cannot know how many of what kinds of vocational education personnel will be needed unless we have some idea of how many of what types of vocational education programs will be installed.

Planning of this latter type has been virtually non-existent until the past three or four years. Instead, it has been typical for local education agencies to institute vocational programs independently, assuming that the teachers and other vocational education personnel which they will need can be found somehow.

Fortunately, state-wide planning for vocational education is improving rapidly in many parts of the country. It is now reasonably common to find one-and five-year plans which are based carefully on determination of needs, establishment of priorities, creation of necessary administrative structures, development of incentives for local action, evaluation of results, and feedback of results to modify future plans. This study is not the place to review the entire process of planning for vocational education. It does seem appropriate to consider the development of plans for vocational education personnel development, however.

Several levels of effectiveness exist in each of the six aspects of vocational education personnel development listed below. The first level in each of the following lists is the most rudimentary, but it exists frequently in various parts of the country. Each succeeding level represents a higher level of sophistication and effectiveness. Each level is found in one or more parts of the country, but Michigan, Ohio and Oklahoma were the states in which a relatively high level of effectiveness was noted in each of the six areas.

Table V-1

Levels of Planning for Vocational Education Professions Development

A. Determination of quantitative needs for various types of personnel based on:

   1. Assessment of difficulties in placing or employing suitable personnel for the current school year.
   2. Linear extrapolation of trends in placing or employing suitable personnel.
   3. A more sophisticated projection of needs by forecasting either supply or demand, but not both.
   4. Projection of needs by forecasting supply and demand, using data on factors such as geographic mobility, proportion of teacher trainees who enter employment in vocational education, age of present staff compared to retirement age, and expected teacher-pupil ratios.

B. Determination of qualitative needs for various types of personnel based on:

    1. Intuition of an individual or a self-contained group.
    2. Recommendations of an advisory committee.
    3. Analysis of existing teacher activities and problems.
    4. Forecast of needs based on estimates of types of programs likely to exist in the near future.

C. Structure for vocational education professions development by universities:

    1. Independent action by each department in each institution.
    2. Coordination of work across departmental lines in each institution.
    3. Creation of a department of vocational education in each institution.
    4. Coordination of activities of all institutions in the state, or coordination of activities across state lines if the states involved are small.

D. Structure for vocational education professions development in local, state and federal agencies.

    1. No specialized structure. Decisions not made or made entirely by persons who have other pressing responsibilities.
    2. One or more persons assigned full-time to planning and

fostering professional development.

3. A distinct administrative unit assigned responsibility for determining personnel needs and seeing that they are achieved.

E. Initial certification of education personnel based on:
    1. Tabulation of collegiate courses and credits and/or years of occupational experience.
    2. Completion of a pattern of preparation approved by designated colleges or employers.
    3. Measurement of ability to perform on simulated educational tasks.

F. Continued certification of education personnel based on:
    1. Years of teaching experience.
    2. Completion of a prescribed number of additional college courses or hours of occupational experience.
    3. Completion of an extensive supervised internship.
    4. Development and implementation of individual plans for professional growth.
    5. Measurement of quality of performance.

The greatest amount of progress in recent years is noted in the structure for vocational education professions development at the state level (Area D, Table V-1). Prior to the passage of the Education Professions Development Act, very few states had administrative units charged with the responsibility for fostering vocational education professional development. Using persuasion and the leverage of modest federal funding, half of the states now have such a unit, at least on paper, and the number of really effective units has multiplied rapidly.

Another aspect in which rapid change has been noted is in the structure for vocational education personnel development in universities (Area C, Table V-1). Before the passage of the Vocational Education Act of 1963, only one or two universities had reached level three (creation of a full-range department of vocational education), and many states had divided vocational education responsibilities among institutions so that no one university had responsibility for a professional development program which covered all aspects of vocational education. Where this fractioning continues to exist, it is very difficult to get beyond level 1 (independent action by each department), and the training of administrators who must serve all of vocational education is especially difficult. In those institutions which have responsibilities for all of vocational education, the majority have reached level 2, and many have reached level 3. This process was aided greatly by Part F, Section 552 (c), which provides that leadership development programs can be supported only in a graduate school which ".....offers a comprehensive program in vocational education.....". As might be expected, the universities which offer doctorates in vocational education have tended to move more slowly toward comprehensive programs than have less prestigious and less conservative schools. When BEPD established sixteen doctoral programs in vocational education, it was hard-pressed to find qualified institutions, and it appears likely that no more than twelve of the eighteen institutions which received awards are "comprehensive" enough to meet the spirit as well as the letter of the law. This situation can be corrected as the leadership development award program is expanded to include graduate work below the doctorate.

The least amount of progress appears to have occurred in the initial and continued certification of vocational teachers. California, New York, Pennsylvania, and several other states have made real progress in measuring the subject-matter competency of vocational teachers through occupational competency tests. Unfortunately, however, they have felt it necessary to impose these in addition to counting the number of years of occupational experience of the teacher. Many states now allow some combination of collegiate and occupational experience prior to certification, rather than specifying a rigid amount of one or the other. Despite the support of Section 553 of the EPDA, very little progress has been made in expanding cooperative and exchange programs with business and industry for training teachers. One difficulty appears to be in the fact that this section is limited by law to experienced vocational education personnel, though the greatest opportunity appears to exist in pre-service training programs.

Modest progress has been made toward a more rational approach to determining quantitative and qualitative needs for vocational education in professional personnel. Michigan, Minnesota, Ohio and Oklahoma have completed studies of quantitative needs in their states, and several studies of the competencies which are needed by vocational education personnel are under way. Only one reasonably sophisticated national study has been completed (Foran and Kaufman, 1971), and the methods used in this and similar studies in other fields have been criticized severely. (Somers, 1971).

Evaluation

When we look at programs outside vocational education, it is remarkable how little has been written about the evaluation of entire programs for the development of educational personnel. Almost all of the evaluations reported are of two types: accreditation visits and opinions of graduates. The National Council for Accreditation of Teacher Education (NCATE) has been particularly active in the former type of evaluation.

Vocational educations professions development programs are seldom, if ever, evaluated independently by means of accreditation visits. NCATE considers all types of EPD programs in its visits each ten years to the majority of universities which develop vocational education professional personnel. Unlike EPD programs in industrial arts, music, special education, there are no NCATE standards for vocational education. The result is that unless the visiting NCATE team happens to include a vocational education specialist, the program tends to receive little attention.

Evaluation of Vocational Education Personnel Development Programs

The evaluation of vocational education personnel development (VEPD) is in its infancy. In part, this lack of sophistication is a reflection of the state of the art in evaluation of all types of education. Presumably one needs to (a) secure agreement on the goals of education, (b) be able to measure the attainment of these goals by students, and (c) learn how to evaluate the contribution of teachers and other educational personnel in affecting student attainment, before being able to (d) measure the effectiveness of various EPD programs in producing personnel of the types previously identified. Each of these steps is sequential, and each depends upon the accuracy with which all previous steps have been completed. It seems clear that none of these steps has been completed fully for either general education or vocational education. Therefore it is not possible at present to use this model without modification.

The most useful modification of this sequential plan of evaluation is to make assumptions about each of the steps preceding the one on which you are working. One may assume, for example, that the goal of a particular level of education is to prepare all students for the next higher level of education. Under this assumption one can proceed with step (b), to determine how well students are prepared for the next higher educational level.

Similarly, it is possible to assume (not having adequate evidence) that in step (c) the effectiveness of teachers is determined almost totally by the depth of their knowledge of the subject matter which they have been employed to teach. Such an assumption would lead to an evaluation in step (d) of the effectiveness of various EPD programs in terms of their success in developing subject matter competency.

Contrariwise, an assumption in step (c) that subject matter competence is a necessary but not sufficient condition for teaching effectiveness will lead to a very different type of evaluation in step (d).

We know very little about the effectiveness of this process of inserting assumptions in lieu of facts. It appears certain that at least some of the evaluations of education personnel development programs have made assumptions about (a), (b), and sometimes (c) without stating these assumptions in a form which is clear to the reader. Indeed, it would appear that these unstated assumptions were not fully recognized by the evaluators.

The Valentine (1969) study of Air Force technical training is one of the best studies of the effects of occupational experience on instruction, but it also serves well as an example of the problems involved in such studies. It almost certainly assumes, without saying so, (b) that performance on a carefully constructed post course examination is the best available measure of (a) effective performance of technical tasks in the Air Force. It further assumes (and makes this assumption clear) that (c) the best teachers are those whose students have the highest scores on post-course examinations. This leads to a comparison (d) of the effectiveness of two patterns of teacher preparation: (1) "field experienced", a combination of experience in the occupation to be taught plus pedagogical training, and (2) "pipeline", a combination of recent completion of the course to be taught (but no experience in the field) plus pedagogical training. This study concluded that "field experienced" instructors performed better in advanced courses, while "pipeline" instructors were clearly superior in elementary courses. A different assumption in step (c), i.e. that the best instructors were those who were preferred by instructor supervisors, clearly gave superiority to "field-experienced" instructors for both elementary and advanced courses. If Valentine had used still a third assumption at (c), eg, that the best instructors were those who had close rapport with students, it is conceivable that the "pipeline" instructors might have appeared as superior for both types of instruction.

A variety of careful studies of this type, each with clearly stated facts or assumptions, are needed before we can be at all sure that our evaluations of pre-service VEPD programs are sound.

Almost all of the published discussions of the evaluation of education personnel development programs have centered on measurement of the quality of the activities of the employed graduates of pre-service programs conducted by colleges and universities. This type of evaluation is important but it omits consideration of several important aspects of vocational education personnel development:

(a) In what fields is the quantity of VEPD inadequate, and in what fields is it excessive, in relation to the demand for instructors, and in relation to the need for instructors? ("Demand" equals vacant positions, but "need" is a larger figure and is based on increase in quantity which would result in improved quality of education.)

(b) What factors affect the rate of dropout from VEPD programs, and what happens to the dropouts? (There are two important types of dropouts: those who leave the program before completing it, and those who graduate, but do not enter educational employment.)

(c) How can inservice programs best be evaluated?

(d) What varieties of VEPD are best conducted by what types of agencies and institutions?

(e) What aspects of professional development are attributable to the efforts of teachers and other educational personnel, and in what ways can these contributions be maximized?

(f) Why are some ethnic and sex groups almost completely unrepresented in the various VEPD programs?

These latter six questions rarely have been addressed.

Most of the few published evaluations of vocational education personnel development are summative in nature. That is, they evaluate an existing process or the product of that process and enunciate a measure of its effectiveness. One reason for this predominance of summative studies is that most VEPD evaluations are conducted at the end of a funded project, and the goal of the evaluation is to encourage (or discourage) dissemination of the project results. In most institutions, however, summative evaluation is less important than formative evaluation (evaluation which has as its goal the improvement of the process before the process ends). Most of this formative evaluation is never described, since it tends to occur within the institution and is regarded as being of little consequence to outsiders. Examples include the input from advisory committees, from student rating of collegiate instruction, and from internal curriculum committees. The particular input from these formative evaluations may, indeed, be of little consequence to the outside world, but the processes of formative evaluation need to be described and disseminated widely to the profession.

Chapter VI

Summary and Recommendations

This report describes the vocational educator, points out some of his weaknesses, and identifies his much greater strengths. This embattled vocational educator feels that he is a second-class citizen in an educational system which places far lower priority on his efforts than on those of the teachers who prepare students for college and for the professions. This leads to frustrations due to real or imagined slights, and creates tensions which were exacerbated when community colleges and manpower programs began to assume many of the roles formerly assigned to secondary schools.

Vocational education, more than any other field of education has been studied, evaluated, and held accountable. It is not surprising that these studies have found weaknesses as well as strengths. When and if the other curricula are studied as intensively, their weaknesses will appear at least as glaring. But this does not excuse our acting to remedy those weaknesses in vocational education which have been identified clearly.

Most of the difficulties in any institution are due to inadequacies in people, and many of these inadequacies can be corrected through training and through a more effective operation of the labor market. This report suggests ways in which the training of vocational educators can be improved and ways in which the labor market for vocational educators can be made to work more effectively.

Chapter I describes the situation in which vocational educators operate and presents a brief history of the field.

Chapter II describes some of the characteristics of vocational educators. It identifies as major problems the low representation of minority group members and the low geographic mobility of professionals in the field. If this analysis is correct, several remedies would be needed:

a. All vacant positions should be advertised widely. This in turn suggests the need for a study of the most appropriate vehicle for reaching people in each occupational field. A periodical which is read by registered nurses is unlikely to be read by machinists.

b. Methods for certifying occupational competence should be developed. One reason for employing occupational instructors locally is the relative ease of identifying persons who can attest to the occupational competence of a prospective instructor. Unfortunately, this can lead to the choice of an instructor from among the best of five farm machinery mechanics known locally, instead of from the best of five hundred who might be considered if trustworthy information about them could be obtained. National efforts in this direction have been undertaken in a variety of fields from surgery to automobile mechanics, but much more needs to be done.

c. Methods for certifying pedagogical competence are also needed. One of the principal stumbling blocks in this area has been a lack of agreement on what constitutes a good teacher. The movement toward competency-based teacher education programs which culminate in an internship in which evaluation of competence is an integral part. Such a system of pre-service education is much nearer actuality in some occupational fields than others. Presumably it will come first in home-making and production agriculture education programs, since these have a strong university teacher education base. It is likely to come last in blue-collar industrial fields which are completely unrepresented in most current university programs.

d. Vocational teachers should encourage some of their own students to become vocational education professionals. One vocational machine shop instructor in Ohio has identified and counseled twenty-five students who currently are teaching in vocational machine shop programs. Distributive education has established a "Hall of Fame" for students who become D.E. teachers. It also honors the teachers of these students.

e. Inbreeding caused by all staff members having their occupational experience locally should be avoided with as much care as inbreeding based on all of the staff having attended the same educational institution.

f. Additional recruitment and training of vocational professionals and "associate professionals" (paraprofessionals) from minority groups is essential. Past and present discrimination against minority group members in many occupational fields has led to a very small pool of qualified potential instructors from minority groups in these occupations. Part B of the EPDA, which addresses critical shortages of instructional personnel, should be used to increase this supply.

g. Reciprocity of certification of vocational education personnel needs to be developed. Certainly one of the factors in low geographic mobility of vocational instructors is the fact that certification in one state is unlikely to lead to certification even in an adjoining state. Not only are requirements in terms of years of occupational experience widely different (eg. from one to twelve years) from one state to another, but pre-service teacher education courses are not given common currency. Two states may have a common requirement of a course in occupational analysis, but not accept each other's courses because they emphasized a somewhat different technique, or because the instructor who taught the course was not known outside of his own state. An even better solution than reciprocity of certification may be to let the employing institution decide whether or not the prospective staff member is competent, and then to let the state decide whether or not the resultant program quality is deserving of future

> reimbursement. Local determination of staff competence at the time of employment can be satisfactory, however, only if the local education agency has the means for searching for qualified individuals over a broad geographic area and if the state has the means for evaluating program quality expeditiously. One advantage of the currently common method of state vocational certification at the time of employment is that it gives the state staff an opportunity to suggest non-local (but in-state) candidates who may be better qualified than the individual the local education agency proposes to employ. An even better method would be a national or regional system for evaluating instructor competency and for providing names of several qualified individuals for each educational staff vacancy.

Chapter III describes the federal legislation which promotes development of professionals in the field of vocational education. It leads directly into Chapter IV, which describes local, state and federal programs for personnel development in vocational education. Most of the recommendations of this report flow from a description of the uncoordinated programs of instruction and certification which produces low geographic mobility and less than optimum [illegible]. It suggests that just as states and local districts are required to prepare one- and five-year plans for vocational education, so should individuals be expected to prepare one- and five-year plans of personal professional development.

But someone needs to aid vocational educators in preparing and carrying out these plans. The planning and completion of individual one- and five-year in-service plans would be greatly facilitated by the appointment of directors of vocational education in-service development. Large metropolitan educational agencies could profitably employ one or more such individuals, but grouping of smaller schools would be necesary to provide adequate employment for a capable director. The duties of a vocational education in-service development director would include:

a. development of criteria and methods for designing individual plans.

b. assistance to individuals and groups of vocational educators and their supervisors in the development of individual plans.

c. organization of peer groups for approval of individual plans.

d. negotiation with universities, employers, manufacturers, trade associations, professional associations, state agencies, and others who could organize educational experiences to help fulfill individual in-service development plans.

e. negotiation with universities to articulate pre-service and in-service programs.

f. assistance in structuring committee assignments, working conditions, exchanges of work assignment, internships, and other internal adjustments which would facilitate achievement of individual plans.

g. negotiation with funding agencies to secure the necessary financial resources.

h. planning for evaluation of the satisfactory completion of individual plans and evaluation of the effectiveness of various types of in-service programs.

Hill (1971, p. 79) reminds us that "continuing education is the responsibility of each individual vocational educator", but that this does not "lessen the responsibility of educational leaders". Vocational education in-service professional development directors could provide such leadership where it is most needed.

Chapter V discusses the vast differences in sophistication in EPD planning from one state to another. In Table V-1, Page 102, it presents a method of assessing the level of planning in each of six phases of vocational education personnel development. (Related to the subject of planning is Appendix A, a description of exemplary programs of EPD. These have been chosen deliberately to represent a wide variety of goals, methods, and institutions, yet each has achieved considerable success and appears worthy of emulation).

The least well developed part of this report comes at the end of Chapter V. Surprisingly little has been written about the evaluation of educational personnel development programs of any type, so the paucity of information about evaluation of such programs in vocational education is not too surprising. Several suggestions are presented for attacking this difficult set of problems.

The final part of this report is devoted to twelve recommendations addressed primarily to federal and state policy makers. Each recommendation is preceded by a brief rationale which attempts to summarize the reasons for the recommendation.

Recommendations

Rationale for Recommendation Number 1
Bureau of Education Personnel Development (NCIES)
Leverage for State Program Change

One of the principal effects of federal funding in education results from the leverage it exerts. By tying federal grants to revision of local and state policies and programs, the funding office can exert pressure which is enormous in relation to the amount of money it spends. This principle has been used with dramatic effect by BEPD in persuading more than half of the states to establish offices responsible for planning, arranging, and evaluating programs of vocational education personnel development activities. Similar effects have been achieved by the statutory requirement of EPDA that Section 552 funds can go only to "comprehensive" graduate training programs. Additional leverage should now be exerted to insure the meeting of further goals.

Recommendation Number 1

Federal funding for vocational education personnel development should be made contingent on each state putting into effect one or more of the following steps each year:

a. Development of plans for certifying the quality of occupational competence of professionals at the time of employment and periodically thereafter.

b. Development of procedures for reciprocity of vocational certification across state lines.

c. Establishment of a vocational education personnel development unit at the state level with full-time personnel and with responsibility for establishing a data system for personnel development planning.

d. Development of plans for college and in-service credit for occupational experience of prospective and experienced vocational education professionals.

e. Advertising the availability of all vacant vocational educational professional positions on a regional or nationwide basis.

f. Support for agencies accountable for vocational in-service education to large city systems and in regions of the state to serve smaller schools.

g. Development of mechanisms for exerting leverage on colleges and universities to provide programs for development of vocational education personnel in badly needed specialties and for implementation of programs for evaluating the quality of their graduates.

Rationale for Recommendations Numbers 2, 3, 4, 5, 6, and 7

Changes in Bureau of Educational Personnel Development (NCIES) Policy

This study has identified a number of deficiencies in vocational education personnel development which could be alleviated by the institution of new programs within BEPD with no change in the Education Professions Development Act, or within the Bureau of Adult, Vocational and Technical Education if it were to use the leverage possible through refusal to approve inadequate state plans for Vocational Education Personnel Development.

Recommendation Number 2

Consortiums of state vocational education professional development units should be funded to provide for planning and contracting for pre-service and in-service vocational education professions development to serve more than one state, under the following circumstances:

a. In groups of sparsely populated states.

b. In occupational fields which are so uncommon as not to justify a program in each state in the region.

c. In occupational fields which are new, and for which the demand is expanding.

Recommendation Number 3

The most critical minority group shortage in any type of profession appears to be the shortage of minority group instructors in vocational education. This shortage is particularly severe in occupational fields in which there has been strong discrimination against employment of minorities, one result of which is near absence of occupationally competent minority group members who are qualified to teach these vocational subjects. Consequently, whole states have not a single black male vocational or technical instructor in several occupational fields. Shortages of American Indian and Hispanic instructors are probably at least as severe, though adequate data are not available. A major priority of Part B of the EPDA should be the identification of prospective vocational instructors from minority groups, and provision of funds for students, colleges, and employers to develop part-time cooperative (part-time school and part-time work) programs to provide these badly needed professionals in the shortest possible time while insuring that they will be able to perform adequately. Opening the door is not enough.

Recommendation Number 4

The geographic mobility of vocational education professional personnel is very low. The reasons for this are not clear, but they would appear to include:

a. Inadequate labor market mechanisms for transmitting knowledge about vacant jobs in vocational education and about the availability of highly competent practitioners of an occupation who might be interested in teaching it.

b. Teacher certification rules which penalize reciprocity across state lines, particularly for vocational education personnel.

c. High out-of-state tuition in collegiate programs.

d. The comparatively low socio-economic background of most vocational education personnel.

The BEPD Leadership Development Awards (Section 552) program provides a partial solution for this problem by assigning each state a quota of trainees and sending them to an outstanding training center, often in another state. As this program is expanded from the present program for doctoral students to include lower levels of graduate school, the process of geographic dispersion should be continued under the assumption that a high percentage of these trainees will have opportunities for leadership outside their home locality and will serve to decrease the amount of geographic inbreeding in the vocational programs to which they move. If Part F of EPDA is expanded to allow undergraduate education professions development, the same principle should be followed.

Recommendation Number 5

General school administrators (school superintendents, community college presidents and their immediate subordinates) should be taught the rationale for vocational education. This should be part of their pre-service and in-service education, but to get it installed, much more active liaison will be needed with the American Association of School Administrators, the National Council of Educational Administration, and the American Association of Junior Colleges. Seminars, convention programs and publications are needed and have been employed on a small scale, but a highly effective method has not been used: the post-doctoral fellowship. If a city superintendent or a college professor of educational administration could spend a six-month post-doctorate with Dr. Paul Briggs of Cleveland, he would learn a great deal.

Recommendation Number 6

One of our most severe personnel shortages is the lack of capable suppliers of manpower data for state and local vocational education planning. Graduate programs in two or three universities should be subsidized from Federal funds until they can become self-supporting. Close ties with the developing programs to train manpower planners for state and local government would appear to be logical, since each program could affect the other in desirable ways.

Recommendation Number 7

Inservice seminars should be provided for state-level education professions development personnel to improve their capabilities for planning. Consultants should be provided to assist these state-level planners in solving individual problems.

Rationale for Recommendation Numbers 8 and 9

Characteristics of Vocational Education Professionals

We know remarkably little about the target population for vocational education professions development--the vocational teachers, counselors, coordinators, supervisors, administrators, researchers, teacher educators, curriculum developers, and evaluators--who are the heart and soul of vocational education. Their successes and their failure affect the lives and futures of students in vocational education programs and could affect similarly the vast numbers of youth and adults who should be, but are not, in such programs. Indeed, as an integral part of career education, vocational education and its practitioners have a potential for affecting all youth and adults. Clearly we could do a better job of designing and carrying out vocational education professions development if we knew more about the characteristics and needs of vocational educators.

A closely related subject is the study of supply and demand for vocational education professionals. Educated guesses indicate a probable shortage in 1975 of from 38,000 to 73,000 teachers (reported in Somers, 1971, p. 157). However, Foran and Kaufman (1971, p. 149) say a possible surplus of 4,000 vocational teachers at the secondary school level could occur if salaries and working conditions were improved dramatically. This latter projection assumes that all new vocational teachers will take positions in secondary schools and that none will be employed in community colleges, in adult education programs or in non-educational jobs. Obviously this level of description and analysis leaves much to be desired. Other national studies of teacher supply and demand are even less satisfactory, and qualitative studies of need in vocational education personnel development are non-existent.

Recommendation Number 8

Section 503a of the Education Professions Development Act should be funded for the first time in order to carry out the statutory authority to "appraise the Nation's existing and future personnel needs in the field of education, including......vocational and technical education......and the adequacy of the Nation's efforts to meet those needs". These studies should take into account the interchangeability of vocational education personnel among programs in manpower training, private trade and business schools, military technical schools, some types of training within business and industry, and vocational education in public secondary and post-secondary schools. Because of the low degree of mobility of vocational education professionals, national studies will not be adequate alone, but must be supplemented by state and regional studies of EPD needs. These studies should be related to assessment of the adequacy of each state's one- and five-year plans for EPD, and to evaluation of the extent to which these plans are being achieved.

Recommendation Number 9

A series of national studies of currently employed vocational education professionals should be funded to answer such questions as:

a. Why do vocational education professionals have such low geographic mobility?

b. Why are vocational education professionals who are of a minority sex (eg. male business and office teachers and female trades and industry teachers) so unlikely to actually enter educational positions for which they are prepared?

c. Why have so many vocational agriculture professionals taken vocational courses in high school, while so few vocational education personnel in other specialities have been closely involved with vocational education at this age?

Rationale for Recommendation Number 10

Changes in the Education Professions Development Act

Part F of EPDA virtually prohibits federal support for programs designed to develop new vocational education personnel who hold less than a bacculaureate degree. In theory, but not in practice, it permits support for experienced non-degree teachers. The problem is that most EPDA-supported programs are at the graduate level, and non-bacculaureate teachers have to jump many hurdles to get graduate (or even undergraduate) credit. More than 25% of currently employed teachers have less than a bacculaureate degree, and in some large parts of vocational education, such as trades and industry, the percentage rises to more than sixty. Obviously those percentages are much larger for inexperienced vocational educators.

Recommendation Number 10

Section 553 of the Education Professions Development Act should be amended to place more emphasis on pre-service bacculaureate programs for vocational education professions in specialities for which a shortage of qualified personnel may reasonably be expected to exist. Bacculaureate programs in shortage fields will also serve experienced, non-degree teachers, but experienced teachers will also need educational leaves and stipends to allow them to acquire degrees expeditiously.

Rationale for Recommendation Number 11

Changes In Appropriations For The Education Professions Development Act

Section 554 of Part F of the Education Professions Development Act deals with EPD for curriculum development. It has never been funded, but USOE has interpreted it as suggesting the need for support for the education of personnel who are concerned with the development of curriculum materials for vocational education. A broader interpretation would allow the development of curriculum materials for the training of vocational education professionals.

Recommendation Number 11

Section 554 of Part F of the Education Professions Development Act should be funded and should be interpreted to encourage the creation of curriculum materials for individualized, open-entry, open-exit, in-service instruction of full-time and part-time vocational education professionals who lack training in organizing, presenting, and evaluating the courses they are teaching. Similar individualized in-service curriculum materials should also be prepared for vocational teacher educators. Another useful aid would be a Directory of Training Opportunities which would describe education professions development programs available from public and private sources.

Recommendation Number 12

The greatest unmet need for personnel development for teachers is in the health occupations area. The Federal government's activities in this important are are sorely lacking in coordination and are almost entirely aimed at increasing technical, rather than instructional competence. Some development programs are being conducted by a few universities, private foundations and professional associations, but the absence of a coordinated effort is undoubtedly an important factor which keeps the need in this field at such a critical level.

APPENDIX

A. SOME EXEMPLARY PROGRAMS

B. BIBLIOGRAPHY

A. SOME EXEMPLARY PROGRAMS

It is useful to supplement planning exercises with views of what has been accomplished elsewhere. Planning which determines that an otherwise desirable program is impractical is brought down to reality when a similar program is found to be working well under similar circumstances elsewhere.

One measure of aiding planning is to describe exemplary programs which appear to go well beyond typical practice, and do so in desirable directions. Unfortunately, our mechanisms for identifying exemplary programs are far from precise. Errors of two types are almost certain to occur. The first of these is to describe a program which appears to be exemplary but is not. The following list attempts to avoid this type of error by relying on personal observation and the descriptions of persons who previously have been found to be accurate observers.

The second type of error is almost impossible to avoid. This is the error of failing to identify and describe an exemplary program, usually because it is not known to the compiler. It is caused not only by the inadequate bredth of the writer's experience, but also because of inadequate efforts by the program's administrators to let the world know that they have developed the better mousetrap.

The following list is replete with the second type of error, but it is hoped that the first type is entirely absent. Programs have been chosen to represent a wide variety of goals and organization in an effort to be a macimum service to policy analysts and program operators who are searching for models. Each should be worthy of consideration for upgrading the vocational education development system of almost any state or region.

Cooperation Between Vocational Education Personnel Development Programs and a State Department of Vocational Education

State departments of vocational education are taking an increased interest in the education professions development programs in their states. The relationship between the Wisconsin State Board for Vocational Education and campuses of the University of Wisconsin is an example of the kind of cooperation possible. The State Board has established an ad hoc committee for Personnel Development in Vocational and Technical Education that is composed of representatives of the University of Wisconsin campuses as well as private institutions that are concerned with vocational education personnel development.

Other relationships involve the Center for Vocational, Technical and Adult Education on the University of Wisconsin - Stout campus, which is partially funded by the State Board. The Center has assisted the Research Coordinating Unit through consultation, by conducting research and leadership in-service development programs, and by conducting research projects which have the training of researchers as a by-product. Another group partially funded by the State Board is the Center for Studies of Vocational and Technical Education at the Madison campus. An example of the activities of the Center is an eight week "Project Upgrade" seminar conducted during the summer to improve the curriculum development competencies of local Vocational

Education Coordinators (LVEC's). Fifteen LVEC's participated during the summer of 1972 and are being used as a resource cadre as the program continues to serve 80 to 90 additional LVEC's during the 1972-73 school year through Wisconsin's Educational Telephone Network.

The Stout campus and the State Board co-sponsored a five day Leadership Development Seminar, funded through EPDA, using simulation techniques and training in Management By Objectives. This program involved 50 participants and a similar program is planned for next summer.

Many campuses of the University of Wisconsin conduct certification courses for the State Board to assist in-service personnel to achieve certification. These courses, generally conducted through extension services, utilize the State Board Staff as teachers and as consultants whenever possible. The University of Wisconsin system is kept informed of state activities and policy through State District Directors meetings held once a month. The Whitewater campus has been awarded research grants from the State Board to conduct research studies in curriculum evaluation by followup studies of students and employers. EPDA doctoral fellows from the Madison campus have served their internships with the State Board.

Wisconsin's well developed relationship between vocational teacher education institutions has produced an excellent program of personnel development. It has survived and flourished despite recent radical administrative changes resulting from the conversion of all state universities into campuses of a state university system. Close coordination between universities and the state department has minimized the adverse effects of the historical pattern of placing the various phases of vocational EPD on separate campuses.

Cooperation with Industry

The Training and Technology project's "Experimental Research Program for Vocational-Technical Teachers" was designed to test the hypothesis that vocational education and industry, by working closely together, can develop and operate viable new programs to prepare and update teachers of vocational and technical subjects.

During a two and one half year period from June 1966 to December 1968, the University of Tennessee joined with the Nuclear Division of Union Carbide to conduct pre-service and in-service vocational education personnel development programs. These programs were held in facilities provided by the U.S. Atomic Energy Commission at its Oak Ridge, Tennessee Y-12 Plant. The Training and Technology Project was funded by a grant from the U.S. Department of Health, Education and Welfare, Office of Education, Bureau of Research.

Two cycles of in-service and pre-service institutes were scheduled over the 31 month period. During the summer of 1966 the first In-service Vocational-Technical Teacher Institute was held for 60 teachers in drafting, machining and electronics from ten Southeastern states. The first Pre-service Vocational-Technical Teacher Institute was conducted during the University of Tennessee's academic year, 1966-1967. Both institutes were repeared during the following year.

Participants in both types of institutes earned college credit for professional education courses taught by university faculty members and for technical courses conducted by engineers, scientists, technicians, and craftsmen of the Union Carbide Corporation.

The In-service Vocational-Technical Teacher Institutes combined the technical and professional requirements for certification maintenance by offering industrial experience and university courses in industrial education. Internal and external evaluation methods indicated that the institutes were valuable to enrolees both in terms of career growth and in meeting the objectives of broader professional-technical background in the subject area and the exchange of new course materials directly applicable to their own areas of instruction.

The Pre-service Institutes were designed to prepare persons with journeyman level of competence in their trades for careers in vocational-technical teaching. Some observations made after two years of experimentation in recruitment, scheduling, and program content were:

> If made aware of the opportunities, a substantial number of qualified persons in industry would be interested in changing to careers in vocational-technical education,
>
> Recently discharged or retired military personnel are a source of well qualified prospective teachers, and
>
> The pre-service Institute provided an intensive, effective, short term means of preparing prospective teachers professionally and technically.

Education and industry, by working closely together, not only were able to develop highly effective teacher training programs, but in the process each institution found new and more effective ways to utilize its own resources. In addition, each institution gained insight into the requirements and capabilities of the other.

Though the project was apparently successful in reaching its goals, it was terminated when Federal funding ended.

U.S. Department of Health, Education and Welfare. Office of Education, Bureau of Research. The Training and Technology Project, Experimental Research Program for Vocational Technical Teachers. Final Report. Project No. 6-2329 OEG-2-6-062329-1865. University of Tennessee, December 1968.

Cooperative Exchange for Personnel Development

The most successful program of personnel development identified by James McCann, Personnel Development Coordinator for the State of New York, is a cooperative exchange program. The program is designed to place teachers in business and industry and to bring industrial people into the classrooms. New York has been successful at placing teachers in non-educational employment, but not in bringing business personnel to the schools except on a short-term basis.

Generally, the cooperative exchange consists of a six week program in the summer. The schedule includes a pre-placement meeting for one week to orient the participants, and to develop curriculum modifications skills, placement in business or industry for four weeks and a post-placement meeting for one week to encourage and guide the teachers to use the industrial experience to change and enhance the teaching program. The pre and post-placement sessions have been described as guided curriculum development and modification courses.

Programs have been conducted at Buffalo, Rochester, Syracuse, Albany and New York City. All programs were coordinated by McCann's office until the summer of 1972 when they were handled by campuses of the State University of New York and by New York University. Fifty teachers participated during the summer of 1970, one hundred during the summer of 1971 and one hundred-twenty in 1972.

The program was funded through Part F, Section 553 of the EPDA for $100,000 in the summer of 1972. Future plans for the cooperative exchange program include funding for one more year through Part F and then assimilation into regular university programs and budgets, or as in-service workshops conducted by universities. Effective September 1, 1974 New York State will not certify occupational education teachers unless they have at least one year of experience in an occupation appropriate to their teaching fields. It is expected that the program described above will give participating universities an opportunity to develop and test procedures for providing occupational experience for their undergraduate students.

In-service Program for New Teachers

For teachers of trade and industrial subjects state vocational certification rules generally emphasize occupational competence as a worker more than professional training or experience in teaching. Most trade and industrial teachers begin teaching with extensive occupational experience but very limited professional training. Dr. Robert Reese, Chairman of the Department of Vocational-Technical

Education at The Ohio State University reports success with a flexible pattern of individualized programs for trade and industrial teachers designed to provide help at the time it is needed.

A profile of T and I teachers in Ohio was studied to determine their characteristics and professional needs. The study found great diversity among teachers of trade and industrial subjects both in backgrounds of teachers and in variety of vocational subjects taught. These differences were taken into consideration in planning The Ohio State University's programs of professional development.

Basic to all programs of personnel development for prospective teachers who do not hold degrees in education is a four week pre-service program "Introduction to Vocational Teaching". This pre-service workshop concentrates on teaching methods and techniques. During the first year of teaching bi-weekly visits from a professional teacher educator are scheduled. These visits are designed to answer questions, to assist in solving problems, for observation, for consultation and assignment on an individual basis. Five in-service seminars are also scheduled during the first year of teaching.

The second year begins with a two-week summer workshop which is a follow-up to the first year of teaching. Problems encountered during the year are discussed and these experienced teachers are much better prepared to participate in college courses such as "Occuapational Analysis and Course of Study" and "Evaluation" during the second year.

New trade and industrial teachers are involved in their own evaluation with the teacher educator and a local school administrator. The evaluation is in terms of individual growth. These development programs are designed to accomodate individual differences and individual needs at the time those needs are most acutely felt.

Feedback on these programs from teachers and administrators has been very good. Another indication of success of the program is the low turnover rate. The percentage of turnover for teachers trained in this program is less than the percentage for professionally trained teachers.

Reese, Robert M., and Orr, Ralph. "T & I Teacher Education: Competencies Without Delay or Frills." American Vocational Journal. Vol. 46 No. 8, November, 1971. p. 61.

Leadership Development Within a University

The purpose of Section 552, Leadership Development Awards, is to prepare leadership personnel for vocational education. Eighteen universities have participated by developing doctoral programs to prepare personnel for leadership positions in vocational education and related educational areas.

The University of California at Los Angeles, one of the original eleven universities selected by the BEPD, has conducted an excellent program of leadership development. Although the Division of Vocational Education at UCLA does not have all service areas of vocational education represented, it offers a comprehensive program in the sense that students in the program have opportunities to participate in a wide range of experience to develop leadership ability. The objective of comprehensiveness is furthered by the strong relationship maintained with the California State Department of Vocational Education. Some EPDA fellows have served their internships with the State Department. The program, under the direction of Dr. Melvin Barlow, is organized with strong emphasis on individual program design. The participants have continued involvement in projects, and are provided internship experiences on many levels and in many areas of vocational education.

The program of leadership development for each student is individualized, and designed to develop areas in which the student is weak. For example, if a student's specialty is agriculture, then the program emphasis is placed on development of a broad base of knowledge and leadership experience in other areas of vocational education, rather than on becoming more of an expert in agriculture.

The program at UCLA appears particularly qualified to continue with the second phase of leadership development where participants will work toward development of leadership on the "middle management" rather than the doctoral level.

Organization for Personnel Development in a Competency-based Teacher Education Program

Competency-based teacher education has been defined as "an approach to preparing teachers that places great stress on the demonstration of explicit performance criteria as evidence of what the prospective teacher knows and is able to do" (Andrews, 1972). The University of Michigan's Occupational Teacher Education Program is moving toward a competency-based approach to serve all vocational service areas. (Vogler, D. in Terry, et al, 1972). The program does not distinguish between service areas for the professional course content. However, the technical content is quite different depending on the vocational subject to be taught. Common professional teaching competencies are emphasized and applications to specific service areas are identified.

The undergraduate program began in the Fall of 1971 with students recruited from graduates of community college vocational-technical curricula. Students with occupational work experience were given priority in enrolment, and those without work experience were enrolled in "Structured Work Experience" courses designed to provide on-the-job learning experiences. The maintenance of students' occupational competencies is encouraged through part-time work for all students during the program.

Students with community college degrees and letters of recommendation enter the program as juniors and could complete the requirements in two years. Baccalaureate degrees will be earned and graduates will be qualified for general and vocational teacher certification.

Two hundred and sixty-nine competencies which form the basis of the curriculum content for the University of Michigan's program were chosen from the 384 competencies identified in the "Model Curricula for Vocational and Technical Teacher Education" project at The Ohio State University's Center for Vocational and Technical Education. These competencies are grouped into instructional modules, and learning experiences designed to result in the acquisition of competencies are provided to each student.

The program includes the development of professional competencies which are given minimal attention in many other teacher education programs, eg.: teaching the socio-economically disadvantaged, development of student-centered instructional techniques, and self evaluation through directed teaching.

Although this description has concentrated on the program's professional teaching component, the program also includes provision for acquisition and maintenance of technical occupational competencies. Interim evaluation of the Occupational Education Program has indicated success, courses have received high ratings in relation to other courses in the School of Education, and there has been no attrition.

Organization For Personnel Development Within a State

Few states had a systematic organization for vocational education personnel development before the existence of the EPDA. Since 1968 most states have assigned a minimum of one person full-time to personnel development. Some states have a larger staff and a personnel development unit in their administrative structure. This represents a significant development and is evidence of the influence and effectiveness of the Education Professions Development Act.

The State of Georgia has utilized Part F of the EPDA very effectively. Professional development training programs have been instituted for school superintendents, principals, counselors, instructors at elementary, secondary, and post-secondary levels, and state staff. Summer workshops have been conducted to develop and expand instructional methods for handicapped and disadvantaged students and to encourage new methods of providing career exploration opportunities for elementary and middle grade students. Workshops have also provided special teaching techniques for teachers who will work with potential school dropouts. (Committee on Education and Labor, 1971.)

Two programs have been developed by the Vocational Education Division to respond to development needs in career exploration and in-service education aimed at serving the needs of the state's potential dropouts: the Program of Education and Career Exploration (PECE) and the Coordinated Vocational and Academic Education Program (CVAE). The personnel to staff these programs have been trained through Georgia's EPDA projects.

The Director of the State Personnel Development System, James E. Bottoms, states that the principal objective of Georgia's EPDA program for vocational education is to use the professional development funds to bring about re-direction in vocational education through professional development of vocational education personnel.

Career Teaching Education Centers have been established in three separate regions of the State to conduct training in the basic core components of Career and Vocational Education. An Advisory Committee for Personnel Development has been formed to advise Bottoms and the Projects Coordinator for the Leadership Services Unit, Gerald Klein. The LSU has specific responsibility for implementing and coordinating the personnel development system which includes management of resources from federal vocational education funds, Part C research funds, State teacher education grants, EPDA Part F funds, local system allocations, and university resources. (BEPD, 1971).

Organization For Personnel Development Within a University

Before personnel development can go very far in university-based programs, progress must be made in organization of vocational education structures. As a result of factors discussed in Chapter IV, vocational teacher education programs in the past have tended to be within each state. Although some universities within a state may have an organizational structure which includes some of the service areas of vocational education, few universities have a structure for vocational education that is comprehensive in the sense of providing the student with ready access to the strengths of all vocational service areas.

The University of Illinois has pioneered the comprehensively organized administrative structure for vocational education. The structure of the Department of Vocational and Technical Education, organized nearly ten years ago, includes divisions of Agricultural Education; Industrial Education (includes Industrial Arts Education and Trade and Industrial Education); Home Economics Education; Business, Distributive and Office Education; and Health Occupations Education; and a joint program with General Engineering for Engineering

Technology.

All Committees in the department, including the powerful executive committee, are elected at large. Because of the comprehensive nature of the department, the degrees which are granted must be especially designed to include the wide range of competencies that can be developed. The baccalaureate degree is a Bachelor of Science in Practical Arts and Occupational Education. On the graduate level six degree programs have been developed: Master of Education or Master of Science or Master of Arts, all with a major in Vocational and Technical Education, an advanced certificate and on the doctoral level the Doctor of Philosophy (Ph.D.) and the Doctor of Education (Ed.D.) with majors in Vocational and Technical Education.

The Department of Vocational and Technical Education is a part of the College of Education and a member of a university-wide Council on Teacher Education which coordinates all teacher education programs in the University. The undergraduate curricula are developed by area committees. Membership for the area committees is based primarily on expertise in the technical area of concern, and committee members do not necessarily come from within the Department of Vocational and Technical Education. Joint programs with the Departments of Special Education and Educational Administration are frequent.

The Chairman of the Department serves as the University's liaison with the State Division of Vocational and Technical Education, and especially with its Leadership and Professional Development Unit.

Personnel Development Organized in Conjunction with Curriculum Development

The Industrial Arts Curriculum Project (IACP) had as its goal the restructuring of Industrial Arts programs in the junior high school. It began research and development in 1965 with funds granted by the Bureau of Research of the U.S. Office of Education. The IACP was a joint effort of The Ohio State University and the University of Illinois.

From the beginning of IACP, six field evaluation centers throughout the United States were used to pilot test the project. These centers offered both "traditional" and IACP courses in school settings to allow teachers to compare them. Because the project had a highly developed philosophical and psychological rationale, which needed to be assimilated by the prospective field evaluation center teachers, these teachers were transported to OSU for in-service education which qualified them to lead the planning, teaching and evaluating phases of the program. After they began teaching the IACP program, they met weekly to review the past week's activities, to preview the next week's activities and to feedback corrections to the curriculum developers. As the curriculum more nearly approached final form, personnel development programs were instituted to help other teachers make the transformation to the IACP curriculum. A "package" program was developed which includes a textbook, a laboratory manual, a teacher's guide, and the supplementary instructional material which are needed. In addition, the package included a list of tools and materials.

The same people who helped to develop the curriculum materials developed a strategy and program for preparing teacher educators to conduct summer in-service programs for teachers at universities throughout the country. These teacher educators were oriented in Ohio State-conducted teacher educator seminars which were supported from royalty monies, and were teamed with field evaluation center teachers to provide traditionally-oriented teachers with intensive instruction in the theory and practice of implementing the new courses in their schools. Nearly a hundred universities have prepared more than 5,000 in-service teachers in this manner. Also, several universities have implemented a complete pre-service undergraduate program for the preparation of teachers of manufacturing and construction. The IACP staff and McKnight and McKnight Publishing Company, which produces the software and hardware for IACP, strongly urge purchasers of the program to make certain that teachers are adequately prepared before instruction begins, and provide assistance in assuring that adequate teacher education is available.

It is particularly noteworthy that IACP in-service teacher education programs overwhelmingly have been supported from college and university internal budgeting, though some industrial grants and EPDA funds have provided additional support. Thus, they are not likely to disappear when outside funding ends.

Professional Association Involvement in In-Service Education

The Illinois Vocational Association has organized an annual convention which meets in August, prior to the start of the normal school year. In the past, each of its subject matter affiliates has held separate conventions at different times of the year. The unified convention is, however, more than the sum of the previous subject-matter conventions. The IVA proposed, and the state accepted the idea that their convention should be greatly expanded to include several score professional workshops, some for college credit, which will meet concurrently with the convention. In 1973, the schedule will be for workshops to meet each morning for two to five days. Many of the five-day workshops will enable participants to complete one semester hour of graduate course credit in any one of seven state institutions of higher education.

The last two days of the week are devoted to the convention proper, which is not markedly different from those conducted in other states. Convention programs are planned for the following year by section leaders elected by teachers in a special field who attend that section meeting. These meetings are coordinated by elected board members of the state professional associations, who supplement the program with meetings of more general interest, and develop a printed convention program. Integral parts of the convention are exhibits prepared by local education agencies (elementary and secondary schools, community colleges, and teacher education institutions) and by suppliers of equipment and services to teachers.

A sizeable allocation of state and federal funds is available for planning workshop activities, paying instructors or workshop leaders, purchasing needed materials, and evaluating workshop activities.

Research for Personnel Development

While most personnel development activities directed by State Departments of Vocational Education have been primarily concerned with development and training, the Minnesota Research Coordinating Unit (RCU) is conducting research programs for vocational education personnel development.

The research efforts of the Minnesota RCU have been directed toward an identification of supply and demand characteristics of vocational education personnel and determination of needs for in-service education within the State. The levels of supply and demand have been categorized by vocational field and by educational levels within fields. The data are being studied to determine implications for vocational teacher education programs.

The techniques of teacher education have also been the subject of research projects. Micro-teaching and teleconference methods are examples of techniques that have been investigated and found to be worthwhile.

A current project funded by EPDA, Part F, Section 553 packages short pre-service programs for Trade and Industrial teachers. The packages are being designed to meet minimum certification objectives for T and I teachers in programs of 12 to 24 clock hours in length.

Research on graduate education has been conducted for the purpose of identifying and describing the roles that vocational education personnel may play in employment situations where degrees above the baccalaureate level are required. The roles are being studied to determine implications for graduate curriculum development.

The Minnesota RCU has maintained a constant series of studies which looked at teacher education, but until now the effort has been relatively unsystematic. Objectives for the future include the development of systematic and comprehensive means of examining vocational education personnel development.

Trade Association Involvement in Training Teachers

Food management and service is one of the most rapidly expanding areas of instruction in vocational education. Because it recognized the need for qualified instructors, the National Restaurant Association (the trade association which represents the food service industry) has undertaken a pilot project to provide one-week workshops for persons assigned to teach this subject. Most of the workshop participants have baccalaureate degrees in home economics, but few have had work experience in the higher class restaurants and hotels which offer the most rewarding job opportunities in this service industry.

The typical workshop includes discussions with leaders from the industry, interviews with persons who are on their way to the top, observation of outstanding establishments of various types, dinner at the chef's table in the kitchen of a major hotel, and a variety of other experiences which give a flavor of the front and back of the hospitality industry. Teachers work on curriculum materials, and are put in touch with educational leaders who can provide help after the workshop ends.

These workshops have been operated five times during the past two years. Evaluations by participants and industry personnel have been enthusiastic, and the number of workshops is likely to expand.

The major difficulty has been one of negotiating financial support. The National Restaurant Association, as its name indicates, covers the entire country. Every state has teachers who need in-service education of the type provided by these pilot workshops. But EPD funds are all distributed to the states, with none remaining for national training efforts. This requires NRA to negotiate training contracts with the individual states, each of which has its own ideas on content management and reporting.

If this type of in-service education is to spread to a wide variety of trade associations, with training sites available on a regional basis, some form of national contracting would appear to be essential.

Trade Teacher Development Conducted by a University in Cooperation with a Trade Union

The Department of Industrial Education at Purdue University has assumed leadership in the development of a program of training for apprentice instructors operated jointly by a trade union and the university. The highly skilled plumbing and pipe fitting trade is learned largely through apprenticeship controlled by the United Association of Apprentices and Journeymen of the Plumbing and Pipe Fitting Industry of the United States and Canada. In order to keep the apprenticeship program current with the state-of-the-art and to maintain efficiency in instruction, the union has sponsored an annual training program for instructors of apprentices.

For nineteen consecutive years the instructor training programs have been held at Purdue for one week in the month of August. Enrollment in these programs has increased dramatically from 65 apprentice instructors in the first course to a combination of 1220 instructors in four programs in the summer of 1972. The planning, facilities, and instructional staff are provided by the Division of Conferences and the Department of Industrial Education at Purdue in cooperation with the Training Department of the United Association. The initial course included formal classes, workshop sessions, and discussion groups on: principles of teaching and learning, lesson planning, teaching methods, and classroom and laboratory management. During the last twelve years the curriculum has been revised to provide a five-year sequence of courses and workshops which culminate in a certificate.

After a short orientation period, the instructor training participants begin classes and workshop activities that continue for eight hours each day. In addition, special evening sessions devoted to technological innovations and teaching and training methods are arranged for all participants. The subject matter of the 200 hour (5-year) certificate course is classified into three categories: applied knowledge, applied technology, and professional teacher education. Each year an instructor following the series takes two ten clock hour courses in professional teacher education and one ten clock hour course each from the applied knowledge and applied technology areas.

Instructional staff for the programs come from a variety of sources. Most are members of the Purdue faculty or are drawn from industry and the training staff of the United Association. Because of the short duration of the courses, content and teaching procedures for each subject are carefully considered and planned for each session. Continous feedback has resulted in revisions and modifications of the program each year.

In addition to the certificate program, special courses have been developed to meet the needs of the union membership. Special technical courses are offered to qualified apprentice instructors to enable them to teach new techniques. Over a period of time, graduates of the basic 5-year course have been promoted to become local coordinators and supervisors of apprentice training. To meet the new needs of these men, courses were developed that are directly related to their specialized functions and duties as leaders and managers of training operations at the local level.

This cooperation in education personnel development has proved its worth and effectiveness through several evaluative measures. Longevity, continuity, and expansion are factors which attest to the acceptance and value of this innovative program. Trainee satisfaction has been measured periodically, and it is clear that trainees have been highly satisfied with instructors and courses. Both the United Association and Purdue University have benefited from this continued cooperative effort.

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